A STUDY TO EVALUATE THE EFFECTIVENESS OF PRE-OPERATIVE TEACHING ON POST-OPERATIVE EXERCISE TO PREVENT COMPLICATIONS AMONG PATIENTS UNDERGOING ABDOMINAL SURGERIES IN SELECTED HOSPITAL AT CHENNAI

Mr. M. SELVAM

Reg. No: 301513451

A Dissertation Submitted to

The Tamil Nadu Dr. M.G.R. Medical University,

Chennai - 32.

In Partial Fulfillment of the Requirement for the

Award of the Degree of

MASTER OF SCIENCE IN NURSING

2017

A STUDY TO EVALUATE THE EFFECTIVENESS OF PRE-OPERATIVE TEACHING ON POST-OPERATIVE EXERCISE TO PREVENT COMPLICATIONS AMONG PATIENTS UNDERGOING ABDOMINAL SURGERIES IN SELECTED HOSPITAL AT CHENNAI

Mr. M. SELVAM

Reg. No: 301513451

A Dissertation Submitted to

The Tamil Nadu Dr. M.G.R. Medical University,

Chennai - 32.

In Partial Fulfillment of the Requirement for the

Award of the Degree of

MASTER OF SCIENCE IN NURSING

2017

A STUDY TO EVALUATE THE EFFECTIVENESS OF PRE-OPERATIVE TEACHING ON POST-OPERATIVE EXERCISE TO PREVENT COMPLICATIONS AMONG PATIENTS UNDERGOING ABDOMINAL SURGERIES IN SELECTED HOSPITAL AT CHENNAI

By

Mr. M. SELVAM

Reg. No: 301513451

A Dissertation Submitted to The Tamil Nadu Dr. M.G.R. Medical University, Chennai, in Partial Fulfillment of Requirement for the Degree of

MASTER OF SCIENCE IN NURSING

2017

INTERNAL EXAMINER **EXTERNAL EXAMINER**

A STUDY TO EVALUATE THE EFFECTIVENESS OF PRE-OPERATIVE TEACHING ON POST-OPERATIVE EXERCISE TO PREVENT COMPLICATIONS AMONG PATIENTS UNDERGOING ABDOMINAL SURGERIES IN SELECTED HOSPITAL AT CHENNAI

APPROVED BY THE DISSERTATION COMMITTEE

RESEARCH GUIDE: _____

Prof. Dr. D.CHARMINI JEBAPRIYA, M.Sc (N)., M.Phil, Ph.D.,
Principal,
Texcity College of Nursing,
Coimbatore - 23.

SUBJECT GUIDE : _____

Mrs. LITTRESHIA BALIN. J, M.Sc (N)
Assistant Professor
Texcity College of Nursing,
Coimbatore - 23.

MEDICAL GUIDE : _____

Dr.PREM KUMAR M.B.B.S(Intensivist)

Sai Hospital

Tambaram,Chennai

CERTIFICATE

Certified that this is the bonafide work of **Mr. M. SELVAM**, Texcity College of Nursing, Coimbatore, submitted as a partial fulfillment of requirement for the **Degree of Master of Science in Nursing** to The Tamilnadu Dr.M.G.R. Medical University, Chennai. Under the **Registration No: 301513451**

College Seal

Prof. Dr. D.CHARMINI JEBAPRIYA, M.Sc (N).,M.Phil, Ph.D.,
Principal,
Texcity College of Nursing,
Coimbatore - 23.

Texcity College Of Nursing
Podanur Main road,
Coimbatore -23.

DEDICATION

I dedicate this book to

God Almighty who blessed me to finish this work successfully

I dedicate this book to my lovable family members

for supporting and encouraging me to believe in myself

I also dedicate this book to my beloved wife and kids

Anita Kanmani

Jan Hazo

&

Beryl Zyana Hazo

For their loving care, emotional and encouragement

Throughout the study.

ACKNOWLEDGEMENT

'I was an active participant in the greatest summit meeting of all times'

Genesis 1:26

Knowledge is a familiarity, awareness or understanding of someone or something such as facts, information, descriptions, or skills which is acquired through experience or education by perceiving, discovering, or learning. Knowledge can refer to a theoretical or practical understanding of a subject.

I would like to extend our sincere thanks to **HAJI. JANAB.A.M.M. KHALEEL**, **Chairman** Texcity College of Nursing Coimbatore, for his support and providing platform for success of the study.

I thank our **Manager Major H.M.MUBARRAK** Texcity College of Nursing paramedical sciences Coimbatore, for supporting me to complete this study.

Guide me when I am in need, I extremely thankful to our beloved **Principal Prof.Dr.D. CHARMINI JEBA PRIYA, M.Sc(N), M.Phil, Ph.d**, Texcity College of Nursing, Coimbatore for her appreciation, encouragement, support and excellent guidance in every aspects of my study.

I wish to extend my thanks to **Prof. P. THENMOZHI, M.Sc (N), M.Sc, (PSY)** Vice Principal, Texcity college of Nursing, Coimbatore, for her valuable guidance and support.

Watering the plants helps in producing sweet fruits. I have immense pleasure to convey my thanks to **Mrs. LITTRESHIA BALIN,M.sc (N) (MSN),** Asssociate Professor, Texcity College of Nursing, Coimbatore, for all the support rendered to me during the endeavor. Her hard work, effort, interest, sincerity, suggestion, constructing comments, helped to mould this study in a successful way. Her inspiration and encouragement laid strong foundation in this research.

It is very essential to mention that her wisdom and helping nature has made my research a lively and everlasting one.

I am extending my gratitude and sincere thanks to **Mrs. ANUSHA M.sc. (N**), Lecturer,Texcity college of Nursing,Coimbatore,for her encouragement,guidance and support to pursue this study.

I am thankful to **Mr. ANNASAMY M.sc Biochemistry, M.Phil. (PGDB**) Statistician for extending necessary guidance for statistical analysis.

I express my deep sense of gratitude to **Mrs. FEMY CARMAL M.Li.Sc,** Librarian and **Ms. K.MARSIYA, B.Sc (CS)** computer staff of Texcity College of Paramedical Science, Coimbatore for extending necessary books and helping in computer findings to complete the study.

I would like to thank all the **FACULTIES** of Texcity College of Nursing Coimbatore for their expert guidance, support and valuable suggestions given to me throughout the study.

I would like to extend my thanks to **Mrs. Muthumalini Alice M.A, (Eng),B.Ed** for her invaluable help in editing.

I would like to extend my thanks to **Mr. J. ARPUTHAM AND MR. KUMAR, ANN'IT, NET CAFÉ, PODANUR** for their full cooperation and help in bringing this study into a print form.

Mata, Pidha, Guru, Daivam. "I am very much indebted to my loveable parents for their continuous support.

Finally I dedicated this study to my loveable parents and family members for their blessing, joy, hope and their fruitful prayer, inspiration, support and encouragement for the accomplishment of my dreams in our entire Endeavour.

ABSTRACT

INTRODUCTION

The main aim of the present study was to evaluate the effectiveness of pre-operative teaching on post-operative exercise to prevent complications among patients undergoing abdominal surgeries in Sai hospital at Chennai.

OBJECTIVES

- To assess the respiratory status of the patients subjected to abdominal surgery in experimental and control group pre-operatively.
- To assess the respiratory status, risk of developing deep vein thrombosis, wound status of patients undergoing abdominal surgery post-operatively.
- To compare the post-operative respiratory status, risk of developing deep vein thrombosis wound status between control group and experimental group.
- To associate respiratory status, the risk of developing deep vein thrombosis score, wound status scores of patients after abdominal surgeries with selected demographic variables.

METHODS

A quantitative approach was used in the present study. The research design adopted in this study was non equivalent pre and post test design as a sub type quasi experimental design.A non probability purposive sampling technique was adapted to select samples.

As a intervention pre operative teaching was given to prevent the post operative complications for the patients undergoing abdominal surgeries

RESULTS

The mean score of experimental group and control group was 24.5 and 23.5. The obtained‘t’ value 1.367 was less than the table value 1.367 was less than the table value (1.960). This finding reveals than there is homogeneity exists among experimental and control group before providing pre operative teaching.

The mean score of respiratory status after the abdominal surgery of experiment group was 30.6 and that of control group was 24.35. The calculated “t” value 10.85 is greater than table value (1.960). It shows that pre-operative teaching

was found to be effective in improving the post-operative respiratory status of experimental group

The post test score of respiratory complication after abdominal surgery in experimental group was 11.3 and that of control group was 13. The calculated 't' value was 2.54 was significant at 39 degrees of freedom and at 0.05 level of significant which is greater than table value (1.960). It shows that pre operative teaching was effective in preventing post operative respiratory complications.

The post test Deep Vein Thrombosis risk score of experimental group was 11.5 and that of the control group was 13.2. The calculated 't' value was 2.55 at 39 degrees of freedom and at 0.05% level of significance which is greater than table value (1.960). It reveals that pre operative teaching on post operative exercises had a significant effect in reducing the risk of developing DVT among the experimental group.

The post test wound status score of experimental group was 60.55 and that of control group score was 50.45. The calculated 't' value was 4.112 at 39 degrees of freedom and at 0.05% level of significance which is greater than table value (1.960). It reveals that pre operative teaching on post operative exercises played a significant role in improving the wound status in experimental group.

The association of demographic variable with post test scores of respiratory status of the experimental group. The x2 value of height was 20.323 at 3 of degree of freedom and significant at 0.05 level. This shows that the height of patient was associated with respiratory status of patients.

TABLE OF CONTENT

LIST OF TABLE

LIST OF FIGURES

LIST OF APPENDICES

CHAPTER – I

INTRODUCTION

"PREVENTION IS BETTER THAN CURE"

Health is a state of relative equilibrium of body form and function which results from its successful dynamic adjustment to forces impinging upon it but an active response of body forces working towards readjustment (Perks, 2008).

A disease is an abnormal affecting body of an organism. It is often considered to be a medical condition associated with specific symptoms and signs. It may be caused by external factors, such as infectious disease, or it may be caused by internal dysfunctions, such as autoimmune diseases.

According to Lewis (2008) disease can be cured by either medical interventions or surgical interventions. Surgery is a common form of treatment when the medical treatment fails. During the surgery when a client is under general anesthesia, the lungs do not ventilate fully. The discomfort of the abdominal incision inhibits inspiration and reduces lung expansion (Khan, 2009).

Thomas (2006) conducted a meta analysis regarding pre-operative teaching of leg exercise and deep breathing exercise in the prevention of post-operative deep vein thrombosis and pulmonary complications. The result was both the exercises were effective in the prevention of post-operative deep vein thrombosis and pulmonary complications.

Cross land, et.al., (2008) stated that respiratory complications were the most lethal responsible for 5% to 35% of post-operative death. It can be reduced by proper treatment along with pre t-operative teaching during hospitalization.

Rodriguez (2007) described that the pre-operative education provided to the clients before surgery acts as a beneficial one. The effective teaching of early ambulation, leg exercises and breathing exercises reduces unexplained anxiety level, post-operative complications and enhance clients participation in their self-care activities.

Gallicher (2004) suggested that the nurse plays a significant role in preparing the patients for surgery, maintaining surveillance of patient during surgery, prevention of complications and facilitating recovery.

So nursing interventions should be directed to prevent complications and the client can return to the highest level of possible functioning. Pre-operative information helps to lessen anxiety, reduce the amount of anesthesia needed, decreases post-surgical pain ad for the rapid wound healing.

1.1 Need for the study

Harrison (2008) reported that over 2, 60,000 hospital admissions are undergoing surgery. In meta analysis of epidemiological studies of India, it was reported that about 75% to 90% of patients were affected by post-operative complications after abdominal surgeries (Lane, 2009).

Greta (2009) reported that the incidence of post-operative complication was 50% among men, while incidence rate was 28% among women. Significant pulmonary complications have been estimated to 40% to 75% of patients following abdominal surgery. Atelectasis is the most frequent pulmonary complications during first 48 hours after surgery (Nirkham, 2009).

Agnes (2008) found that the highest incidence of post-operative complications was between 1d and 3 days after the surgery. However, specific complications occur in the following distinct temporal patterns: early post-operative, several days after the operation, throughout the post-operative period and in the late post-operative period.

Costa (2007) stated that respiratory coordination exercise associated to trunk and limb movements and muscle relaxation increased the respiratory muscle strength and amplitude of abdominal movement in obese patients. Post-operative pulmonary complications are a major problem after upper abdominal surgery. They lead to a prolonged hospital stay as well as increased costs and are one of the main causes of early postoperative morbidity and mortality (Stephen, et.al.,2009).

Gail (2007) found that pre-operative teaching and post-operative exercises together can help the patients to prevent lethal physiological effects of anesthesia, and

reduces the post-operative complications like pneumonia, and other circulatory problems.

During investigators clinical experience in surgical wards, found pre-operative teaching regarding post-operative exercise was not given more importance in nursing care, many patients developed post-operative complications which motivated the researcher too do a study on effectiveness of pre-operative teaching on post-operative exercise to prevent selected postoperative complications among abdominal surgery patients.

1.2 Statement of the Problem

A Study to Evaluate The effectiveness of pre-operative teaching on post-operative exercise to prevent complications among patients undergoing abdominal Surgeries in selected Hospitals at Coimbatore.

1.3 Objectives

- To assess the respiratory status of the patients subjected to abdominal surgery in experimental and control group pre-operatively.
- To assess the respiratory status, risk of developing deep vein thrombosis, wound status of patients undergoing abdominal surgery post-operatively.
- To compare the post-operative respiratory status, risk of developing deep vein thrombosis wound status between control group and experimental group.
- To associate respiratory status, the risk of developing deep vein thrombosis score, wound status scores of patients after abdominal surgeries with selected demographic variables in the experimental group.

1.4 Hypothesis

H_1 -There will be a significant difference between pre test and post test of respiratory status among the patients undergoing abdominal surgery in experimental and control group.

H_2 -There will be a significant different between post test risk of developing deep vein thrombosis and wound status of patient undergoing abdominal surgery in experimental and control group.

H_3 -There will be a significant relationship between pre-operative teaching and post-operative exercises to prevent selected post-operative complications.

H_4 - There will be a association between post test level of respiratory status, deep vein thrombosis and wound status with selected demographic variables in experimental group.

1.5 Operational Definitions

Effectiveness

It refers to desired changes that can be brought about by teaching programme, in the respiratory status, blood flow and wound healing process as a result of; post-operative exercise

Pre-operative Teaching

It refers to the teaching on post-operative exercises which include breathing exercises coughing exercises, early ambulation, turning exercises and leg exercises given one day before surgery.

Post-operative Exercises

It refers to the specific exercise's done after 16-24 hours of the surgery such as deep breathing, coughing, early ambulation, turning exercises and leg exercises, which improve ventilation, circulation, and enhance wound healing and prevent complications.

Post-operative Complications

It refers to specific problem such as respiratory complications, deep vein thrombosis, wound infections and delayed wound healing that occurs in the post-operative period.

1.6 Assumptions

- Deep breathing and coughing exercises prevents post-operative respiratory complications.
- Leg exercises improve muscle tone, promote blood flow and venous return and thus prevent Deep Vein Thrombosis

- Turning allows maximum lung expansion.

Early ambulation improves blood flow to the extremities thus reduces the muscle weakness and prevent respiratory complications, complications of wound healing and Deep Vein Thrombosis.

1.7 Delimitations of the study

- The study was delimited to the patients admitted for the abdominal surgery in Sai Hospital.
- Data collection was delimited to 4 weeks

1.8 Projected Outcome

- The study findings will identify the effectiveness of pre operative teaching on post operative exercise to prevent the complications of abdominal surgeries.
- The study findings will help to prepare a protocol on post operative exercise to prevent the complications of abdominal surgeries.

1.9 Conceptual Framework

Rosenstock's, Backer and Mimans Health Belief Model

Conceptual Framework for this was derived from Rosenstock's, Backer and Mimans Health Belief Model (1974). It provides a way of understanding and predicting how the client will behave in relation to their health and how they comply with health care therapies. Use of the model is based on a person's perception of the susceptibility to an illness, the seriousness of the illness, the seriousness of the illness, and the benefits of taking action to prevent the illness.

The health belief model helps to understand the factors influencing client perception, beliefs and behaviors to plan care that will most effectively assist client in maintaining or restoring health and preventing illness.

The first component in the model involves the persons perceptions regarding seriousness of abdominal surgery and susceptibility to various pre operative complications.

The second component deals with individuals perception of seriousness of illness. This perception is influenced and modified by demographic variables, psychological factors, perceived threats of the illness, and cue to action. In This present study the second component includes individual perception of the seriousness of post operative complications such as respiratory complications, Deep Vein Thrombosis and complications of wound healing.

This perception was influenced and modified by demographic variables such as smoking, consumption of alcohol, and using tobacco.

This cue to action is the pre operative teaching on post operative exercise (deep breathing, coughing, leg exercise, turning and early ambulation) given by the researcher.

The researcher assessed the pre operative respiratory status for the subjects of both experimental and control group and provided pre operative teaching regarding post operative exercise to the experimental group day before surgery.

The third component, the likelihood of actions, that a person will take actions results from person perception of the benefits of and barriers to take action. Preventive action may include life style changes increased adherence to medical therapies or a search for medical advice or treatment. In this study likelihood of action, the subjects of experimental group perceived the benefits of post operative exercises such as earlier recovery, lung expansion, perceived of respiratory complications, prevention of Deep Vein Thrombosis and improved wound healing more than the perceived barriers such as pain, drowsiness, because of anesthesia, sedative effect, unwillingness, lack of knowledge, and fear of breakdown of sutures.

In the experimental group the perceived benefits of doing post operative exercise were more than the perceived barriers because of the pre operative teaching on post operative exercise, hence the subjects in the experimental group did post operative complications were relieved. In the control group since the y did not receive any pre operative teaching on post operative exercises more than the perceived benefits, leading to post operative complications, as evidenced by the post operative assessment of respiratory status, risk of developing Deep Vein Thrombosis and Wound Status, Consecutively for seven days.

.

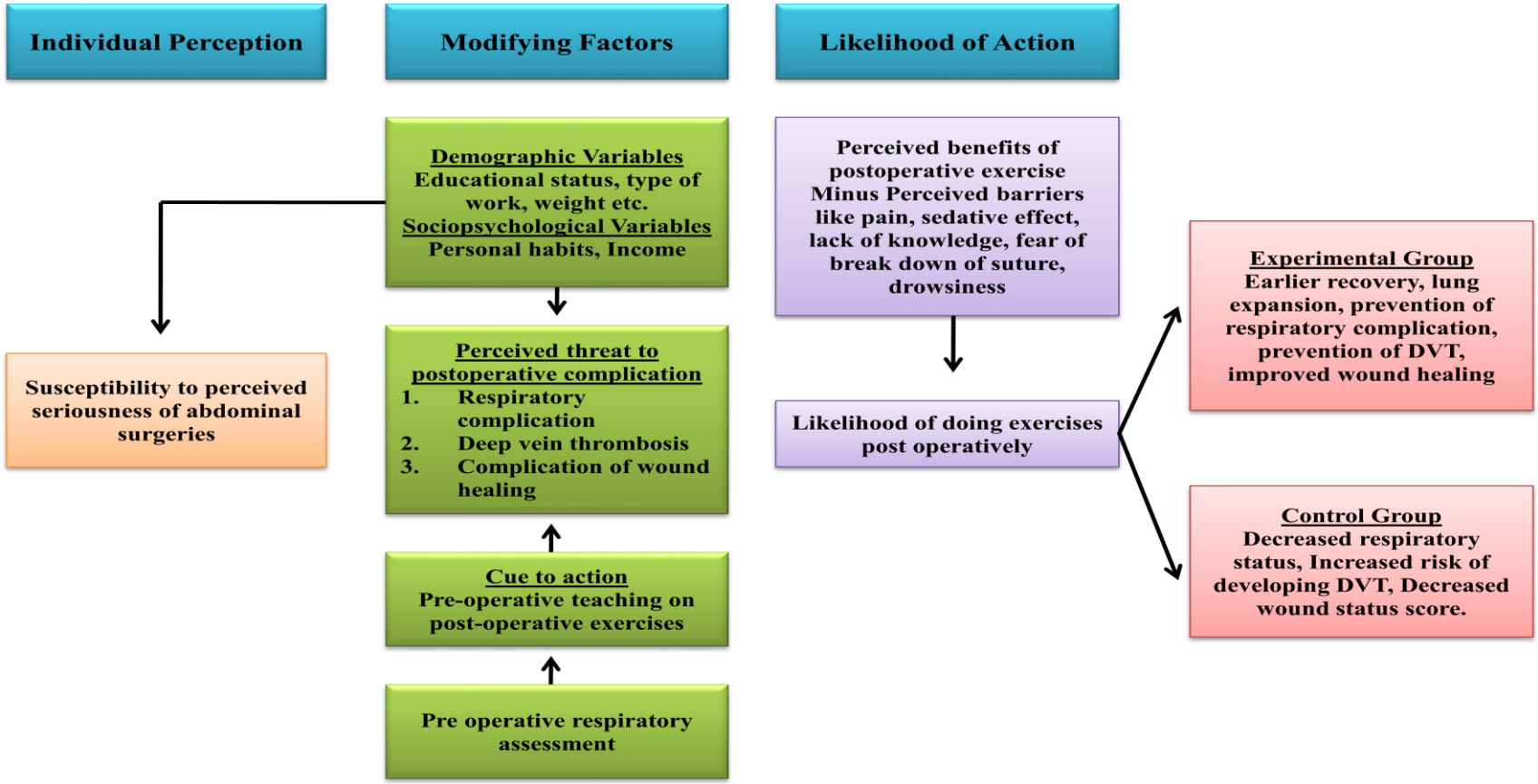

Figure.1.1 Conceptual Frame Work for the Study, Rosenstock' Health Belief Model (1974) (Modified)

CHAPTER – II

REVIEW OF LITERATURE

Review of literature is an organized critique of the important scholarly literature supports a study and a key step of the research process.

(Geritobian, et.al., 2007).

A literature review helps to lay the foundations for a study and can also inspires new research ideas.

(Polit and Hungler, 2009).

Exercises have many well documented benefits for weight control and prevention of diseases. Likewise post-operative exercise's helps to reduce the circulatory and respiratory complications among the patients undergoing abdominal surgeries.

Section A: Studies and literature related Comprehensive view of post operative complications.

Section B: Studies and Literature related to effect of postoperative exercises in preventing the post operative complications.

2.1 Studies and literature related Comprehensive View of Prevalence of Post-Operative Complications

World Health Maintenance Survey (2009) Conducted among Government Hospitals, suggested that there were, (8.6%) abdominal surgeries and (4%) other surgeries. The most common surgeries were appendectomy, herniorraphy, caesarean section, hysterectomy etc.

Olin, et.al., (2009) conducted a study on prevalence of complications after abdominal surgeries among patients in a general surgical ward at a tertiary care teaching hospital. A total of 501 patients were admitted during the study period. Totally 411 surgeries were performed. 258 (62.8%) were elective and 153 (37.2%) were emergency procedure. Hernia repair was the most common surgery performed in 92 (22.4%) patients, followed by appendicectomy in 64 (15.6%) and cholecystectomy

in 54 (13.2%) patients. Complications were documented in 122 (29.6%) patients. Most common complication observed was postoperative pyrexia in 75 (18.2%) patients, followed by postoperative nausea and vomiting in 48 (11.6%) patients, wound infection in 47 (11.4%) patients, (0.9%) died in the postoperative period.

Favie (2009) conducted a randomized clinical trial conducted at The University Medical Center Netherlands and reported that out of 655 patients referred for elective abdominal surgery, 299 (45.6%) were at risk for developing post operative pulmonary complications. It is a prospective study on respiratory complications with total sample of 299 patients who underwent abdominal surgery, it is found that 82 of them (13.6%) had respiratory complications, pneumonia and atelectasis was the most common complications (Bonacchi, 2007)

Aroma (2006) reported that the clients after abdominal surgeries had post operative complications like atelectasis 39%, pneumoia was the frequent event over 25% followed by broncho constriction 18%, acute respiratory failure 15%, bronchial constriction 3% and also stated that complications were mostly seen above 60 Years.

The Agency for Health Care Research and Quality (2009) estimated that 4 patients of every 1,000 who undergo surgery will experience postoperative respiratory failure, and eight of every 1,000 will experience a pulmonary embolus.

National studies (2008) reported that incidence of wound dehiscence after abdominal surgeries ranges from 0.5% to 6% and International studies reported an average incidence of 1% to 2%. It is estimated that more than half a million people develop Pulmonary complications yearly, resulting in more than 40,000 deaths (National Health Survey, 2009).

Mehta (2009) described that more than 1, 90,400 peoples in a year were suffering from pulmonary complications like pneumonia, atelectasis, ARDS, bronchitis after abdominal surgeries.

Mathew (2006) stated that post operative pains after abdominal surgery are a significant source of infection, complications and prolonged length of stay in hospital. Patient related to risk factors are poor general health, unsterile methods, laboratory parameters and dependent functional status.

Ronald (2006) conducted prevalence survey of nosocomial infection. They included all hospitalized patients (116) concept those who stayed less than 40 hours. The result showed that 64.4% patients had nosocomial infections. The infection rate increases with abdominal surgeries, debilitated post operative physical status, and intensive care. The average increase in duration of hospital stay for infected patient has ten days. This data confirm the importance of prevention of nosocomial infection and emphasize the need of surveillance which control infections.

Bake (2008) suggested for the patients after abdominal surgeries, active moments like dorsiflexion, plantar flexion, and subtalar inversion promotes the highest blood supply to the extremities than passive movements.

Sorenson (2008) conducted a cohort study on 4855 clients at the Department of Surgical Gastro enterology, Bispeberg Hospital stated that following elective surgeries, the incidence of tissue and wound complications and Deep Vein Thrombosis were 6% Factors associated with complications following elective surgeries were smoking, improper hygiene and wound care.

Bardin and Simal (2008) observed the relationship between the movements of foot and ankle with venous blood flow from lower limbs by using 20 post operative patients. The active exercises produced higher peak (58%) and mean velocities of blood flow (38%). The passive exercises produced 25% of peak and 13% of mean velocities of blood flow.

Swapna (2010) conducted a study to assess the effectiveness of foot and hand massage to relieve the post operative pain among the patients with abdominal surgeries. Two group pre test and post test experimental group design was used among 40 samples. The calculated 't' value was 17.8 for the experimental group regarding pain. The results showed that food and hand massage ad a significant effect on post operative pain among the patients with abdominal surgery in experimental group.

Matte (2008) conducted a study on the effect of compression stockings and early ambulation on patients after abdominal surgeries. He conducted that preventive use of compression stockings and early ambulation from the first post operative day

can be considered as effective means to decrease the risk of Deep Vein Thrombosis among patients in experimental group.

Naidu (2007) stated that physiotherapy either with or without incentive spirometry reduces the incidence of post operative complications and improves lung function. Incentive spirometry can provide an assessment of lung recovery, well organized and regular physiotherapy remains the most effective mechanism to augment their patient's recovery and avoid post-operative complications.

Vincent, et. all., (2006) conducted a study to assess the effectiveness of early ambulation in patients after abdominal surgery. He advised ambulation of post operative patients with in 24-48 hours after surger. The results showed that early ambulation helps in preventing complications resulting from prolonged bed rest, venous thrombosis, embolism, and showed a marked reduction in pulmonary complications.

2.2 Studies and Literature Related to Effect of Post Operative Exercises in Preventing the Post-operative Complications

Johnson and Kean (2007) found that one of the most important responsibility of the nurse in pre operative preparation of patient for surgery was per-operative education. Pre-operative teaching helps to relieve emotional stress and prevention of complications. By providing pre-operative teaching about post-operative exercises, the nurse can inform, support and collaborate the planned care among the adult surgical patients.

Thompson, et. al., (2005) said that all patients, regardless of age, are at risk for post operative complications include post operative fever, atelectasis, wound infection, embolism, and Deep Vein Thrombosis.

The Agency for Healthcare Research and Quality (2009) estimates that four patients of every 1,000 will experience a pulmonary embolus. Respiratory complications are the second most common reason for unexpected death or transfer to an intensive care unit and often are preventable

Lawrence and Cornell (2006) conducted randomized control trials meta analysis about quality, intervention surgery, post operative pulmonary complications

and adverse events at health service centre by using standardized forms. The evidence indicates that lung expansion interventions such as deep breathing exercises, incentive spirometry reduce pulmonary risk.

Mackay (2005) conducted randomized clinical trial in the clinical settings by selecting 56 patients raised to determine whether deep breathing and early mobilization improved clinical outcomes. Breathing interventions quantified. Outcome was assessed by standardized outcomes tool. Findings suggest that deep breathing exercises and early mobilization reduced postoperative pulmonary complications in high risk open abdominal surgery subjects.

Janet (2007) conducted a study on the effectiveness of breathing exercises in preventing pulmonary and mound complications and was studied in 60 patients undergoing abdominal surgery. The experimental group received one pre operative teaching session and sterile dressings twice a day for the first four days. Routine post operative care was given to all 40 patients. Breathing exercises reduced the incidence of pulmonary complications and wound complications.

University of Michigan Health System (2005) investigated that breathing exercise helps to use entire lung and keeps chest muscle active. Lungs do not move oxygen with each breath with less effort. Breathing exercise also can reduce symptoms caused by anxiety and stress. Learning to control breathe rate is a big benefit.

Bold (2006) described 50 cases in which ambulation was established with in twenty four hours. The majority of the patients were ambulated by the first post operative day. A lower mortality and decreased frequency of nausea and vomiting, with less abdominal distention were reported by the researcher. There was also decreased tendency towards bronchial and other pulmonary complications and circulatory disturbances.

Greenwood (2005) investigated the provision of additional evening physiotherapy on pulmonary complications after abdominal surgery in hospital physiotherapy department. 31 elderly patients received physiotherapy for 48hrs. It includes breathing and coughing exercises. Findings were measured and the result

shown that additional evening physio reduces post operative deterioration in gas exchange after abdominal surgery.

Marret (2006) conducted a cohort study on Rehabilitation after the surgery. He states that combined strategies of anesthetic and surgical care define post operative rehabilitation, which aims to accelerate recovery from surgery, shorten convalescence and reduce post operative morbidity. The rise of multimodal fast track clinical rehabilitation programme should improve outcomes and quality of life reduces hospital stays and save money.

Lesley (2008) conducted an experimental study among patients who are posted for abdominal surgeries regarding the effectiveness of pre operative teaching on postoperative management. Findings showed that patients in the group given pre-operative instructions performed at a significantly higher level. They required neither prompting nor assistance in the initiation and completion of ambulation tasks compared to the uninstructed group.

Cooke and Nally (2007) investigated the effects of active movements of one foot on venous blood flow, five days after surgery, movement of foot for one minute and the result confirmed the beneficial hemodynamic effects of active movement of the foot in the post operative period and decreasing risk of venous thrombosis.

Betel (2006) conducted a study to determine the effectiveness of turning and leg exercises in preventing Deep Vein Thrombosis. The Patients were advised to perform these exercises two hourly. The result showed that patients who were having risk of Deep Vein Thrombosis, experienced a significant reduction in swelling of the legs.

Neiderman (2008) found that exercise is widely recognized as a potential means of improving physical endurance. Exercise is physical activity for conditioning the body, improving the health, maintaining fitness of providing therapy or restoring overall body to a maximal state of health.

Mollan, et. al., (2007) investigated the effect of active movement of one food to enhance the venous blood flow for four days after total hip replacement. The actual venous outflow at rest was measured with the use of venous occlusion stronin gauge

plethysmography. Results confirm the foot post operatively as a part of prophylactic regimen directed by decreasing the risk of venous thrombosis.

Khonrey.A.F (2005) investigated 120 subjects to explain early morning rise in blood pressure related to ambulation. They identified that the patients who were practicing early morning exercise helps in maintaining cardio vascular function.

Shafers (2007) explained that morning in and out of bed is encouraged as soon as permitted. Activity stimulates deeper respiration and prevents pooling of secretions. Turning and changing positions allows greater chest expansion and helps in drainage of secretion by gravity. Exercise of lower extremities helps in prevention of venous stasis.

Economo (2008) said that the ideal timing of pre operative teaching is not on the day of surgery, but during the pre admission visit when diagnostic tests are performed. At this time the nurse or resource persoructions provide written instructions about many types of answers questions and provide an important patient teaching. Most instructions provide written instructions about many types of surgery.

Tarsitano (2007) conducted a study on a sample of 44 patients from a hospital. Structured pre operative teaching was conducted primarily by the principle investigator and checklist used to indicate that patient could perform deep breathing, coughing exercises. Structured teaching programme was primarily conducted; it improved significantly the ability of the patients to deep breath and cough post operatively as measured by pulmonary function test.

Singhal (2009) suggested that the post operative wound infection account for 14% to 16% of the 2 million nosocomial infections in the US, and 77% of deaths of surgical patients can be traced back to surgical wound infection. The incidence of wound sepsis is higher in patients who are malnourished immune suppressed of older or who have had a prolonged hospital stay or a lengthy surgical procedure (Galbrith, 2007).

Owings (2007) said that with doctors performing over 45 million surgeries each year in the US, even small improvements will produce significant results. By implementing corrective changes to reduce the occurrence of postoperative wound

infection by even one-quarter of 1%, hospitals could prevent over 1,00,000 infections each year.

Grief, et. al., (2006) suggested that in post operative patients, surgical site infection is the most common nosocomial infection, with 67% of these infections occurring within the incision and 33% occurring in an organ or space around the surgical site. The morbidity rate associated with abdominal wound evisceration is high; the mortality rate ranges between 10% and 40%, and can be as high as 44% for adults. It can be prevented by careful attention to surgical techniques and proper education (Centers for Disease Control and Prevention, 2008).

Carol (2007) stated that abdominal distension may be prevented or minimized by early and frequent ambulation, which stimulates intestinal motilituy. The nurse should assess the patient regularly to detect the resumption of normal intestinal peristalsis as evidenced by the return of bowel sounds and passage of flatus.

Lewis (2009) suggested that wound infection may result from contamination of the wound from three major sources: exogenous flora present in the environment and on the skin, oral flora and intestinal flora. An incision disrupts the protective skin barrier. Therefore, wound healing is one of the major concerns during the post operative period.

Clement (2005) conducted a clinical trial on early ambulation and post operative recovery. According to him early ambulation after surgery helps the patient to wear off physiological effects of anesthesia, stimulate peristalsis movements and reduces the post operative complications. It increases the ventilation and reduces stasis of bronchial secretions in the lungs, reduces the possibility of post operative abdominal distension, prevent stasis of blood by increasing rate of circulation in the extremities increases the rate of healing in abdominal wounds.

Vracio (2007) conducted a study on the effectiveness of breathing exercises in preventing pulmonary and wound complications was studied in 40 patients undergoing abdominal surgery. Both high and low risk patients in the experimental group received one pre operative teaching session and sterile dressings twice day for the first four days. Routine post operative care was given to all 40 patients. Breathing exercises reduced the incidence of pulmonary complications and wound

complications. Preventive teaching in the pre operative period, which is highly versatile tool that can be used in all the four modes of necessary interventions to prevent, promote and maintain and modify a wide variety of behaviour in a receptive individual or group.

Foster (2007) conducted a study on 300 clients in Ohio State USA stated that wound management for individual patients must be derived using best evidence and taking into account. The study concluded that general factors such as safety, comfort, pain management and convenience must be born in mind when deciding which dressing is the best of individual patients.

CHAPTER –III

METHODOLOGY

This chapter includes research approach, research design, setting of the study, population, sample size and sampling technique, criteria for the selection of the sample, description of the tool, testing of the tool, pilot study, data collection procedure and plan for data analysis.

3.1 Research Approach

It is defined the approach as a general set of orderly discipline procedure used to acquire information.

Poilt and Hungler (2004)

A quantitative approach was used in the present study.

3.2 Research Design

Research design is the plan and strategy of investigation for answering the research question. It is an overall blueprint, with the researcher selected to carry out this study.

Non-equivalent control group pre-test post-test design as a subtype of quasi-experimental research design was adopted for in this study.

E	O_1	X	O_2	O_3	O_4	O_5	O_6
C	O_1		O_2	O_3	O_4	O_5	O_6

E= Experimental Group

C=Control Group

X=Intervention by teaching on post-operative teaching

O_1=Assessment of respiratory status before pre-operative teaching

O_2 - O_6= Assessment of respiratory status, risk of developing deep vein thrombosis and wound status post-operatively for five consecutive days

Pre test and post test was done to assess the respiratory status. Post test was done to assess risk of developing Deep Vein Thrombosis and Wound Status.

3.3 Research Variables

Independent Variables:

Pre operative patients on post operative exercise

Dependent Variables

Comlications of abdominal surgeries

3.4 Setting of the Study

The study was conducted at Sai Hospital, Chennai. It is a 100 bedded multi-specialty Hospital. The total number of beds in surgical unit is 25. On an average 30-50 patients attend the outpatient department daily.

3.5 Population

The population is the total number of people, who meet the criteria that the researcher has established for the study from which subjects will be selected and with whom findings will be generalized. (**Polit, 2004**)

The population of the study constitutes all the patients who were undergone abdominal surgery in Sai Hospital during the data collection period.

3.6 Sample Size

Sample size is the number of items to be selected from the universe to constitute a sample. The selected sample size was 40, out of Which 20 patients were in experimental group and the rest 20 patients were in control group.

3.7 Sampling Technique

Sampling is the process of selecting cases to represent an entire population, to permit inferences about the population. Non probability purposive sampling technique was used for selecting the sample.

3.8 Criteria for Selection of Samples

Inclusion Criteria

Clients who are

- in the age between 20-60 years
- undergoing abdominal surgery for first time
- undergoing abdominal surgery through open laparotomy.
- who are undergoing elective surgery
- who are able to follow the instructions

Exclusion Criteria

Cients who are

- above 61 years of age
- undergoing emergency surgery
- having systemic disorders
- discontinue the exercises
- ar having disturbances in sensory perception

3.9 Description of the Tool

Section I: Demographic Variables

Demographic Variables includes age, sex, education, occupation, income of family, personal habits, family type, weight and height of patients and duration of hospitalization.

Section II: Assessment of Respiratory Status

Part A: The observational checklist consists of 34 items for assessing respiratory status. Each item has two options-Present and Absent.

For positive questions,

Present- 1

Absent - 0

The possible maximum score was 14 and the minimum score was 0. High score indicates good respiratory status. Low score indicates poor respiratory status.

For negative questions, (*marked)

Present- 0

Absent - 1

The possible maximum score was 20 and the minimum score was 0. High score indicates good respiratory status. Low score indicates poor respiratory status.

Part B: The observation checklist consists of 16 items for assessing respiratory complications. Each item was scored as

Present- 1

Absent - 0

The possible maximum score 16 indicates development of respiratory complications. Low score 0 indicates normal respiratory status.

Section III: Assessment of Risk of Developing Deep Vein Thrombosis

The observation checklist consists of 16 items. Each item was scored as

Present- 1

Absent - 0

The possible maximum score 16 indicates, the high risk of developing Deep Vein Thrombosis. Low score 0 indicates low risk of developing Deep Vein Thrombosis.

Section V: Assessment of Wound Status

The Wound Assessment Parameter Scoring Tool (WAPST) was modified by the investigator according to her convenience. It has 5 ratings according to wound status.

Each statement was graded as following:

a - 5

b - 4

c - 3

d - 2

e - 1

The possible maximum score of 65 indicates healthy wound generation and a minimum score of 13 indicates wound degeneration.

3.10 Testing of the Tool

Content Validity

The tool was given to five experts in the field of nursing medicine for content validity. Necessary modifications were made as per expert's opinion. The modifications were incorporated in the preparation of final tool.

Reliability

Inter rater reliability was used to establish the reliability of respiratory status tool Part A was 0.89. Part B was 0.87. The reliability of risk of developing Deep Vein Thrombosis was 0.86. The reliability of wound status assessment was 0.89.

3.11 Pilot Study

The pilot study was conducted to make sure that the tool was capable of eliciting response from the respondents. It was conducted among 10 patients for a period of one week, five patients for each control group and experimental group. The pilot study revealed that the tool was reliable to conduct study.

3.12 Data Collection procedure

Formal permission was obtained from the Hospital authority to conduct the study. The study was carried out for a period of four weeks from 02-01/2017 to 30-01-17. The samples were selected by using non probability purposive sampling technique on the basis of selection criteria. Informed consent was taken from the respondent. The 20 samples were considered as control and 20 samples were considered as experimental group. After the general instructions the investigator collected the demographic data.

The patients who were selected for control group were assessed pre-operatively for respiratory status, and post-operatively for respiratory status, risk of developing deep Vein Thrombosis and wound status for five consecutive days starting from the first post-operative day.

The patients who were selected for experimental group were assessed pre-operatively for respiratory status, gave the pre-operative teaching on post-operative teaching on post-operative exercise. It was a teaching where the subject watches it for about 20 minutes. Subjects were encouraged every second hourly to do the exercises. The researcher then assessed for respiratory status, risk of developing Deep Vein Thrombosis and wound status for the five consecutive days from the first post-operative day.

3.13 Plan for Data Analysis

The investigator adopted descriptive and inferential statistics to analyze the data. The demographic variables were analyzed by using frequency and percentage. The effectiveness of

Pre-operative teaching on post –operative exercise and association between variables were analyzed by using student 't' test, independent's and Chi^2 test.

3.14 Ethical considaration

The study was conducted after the approval of research committe and hospital.The nature and purpose of the study was explained to the authorities of Sai Hospital,Chennai.Oral consent was obtained from the study participants.Assurance was given to the study samples that the anonymity of each individual would be maintained strictly

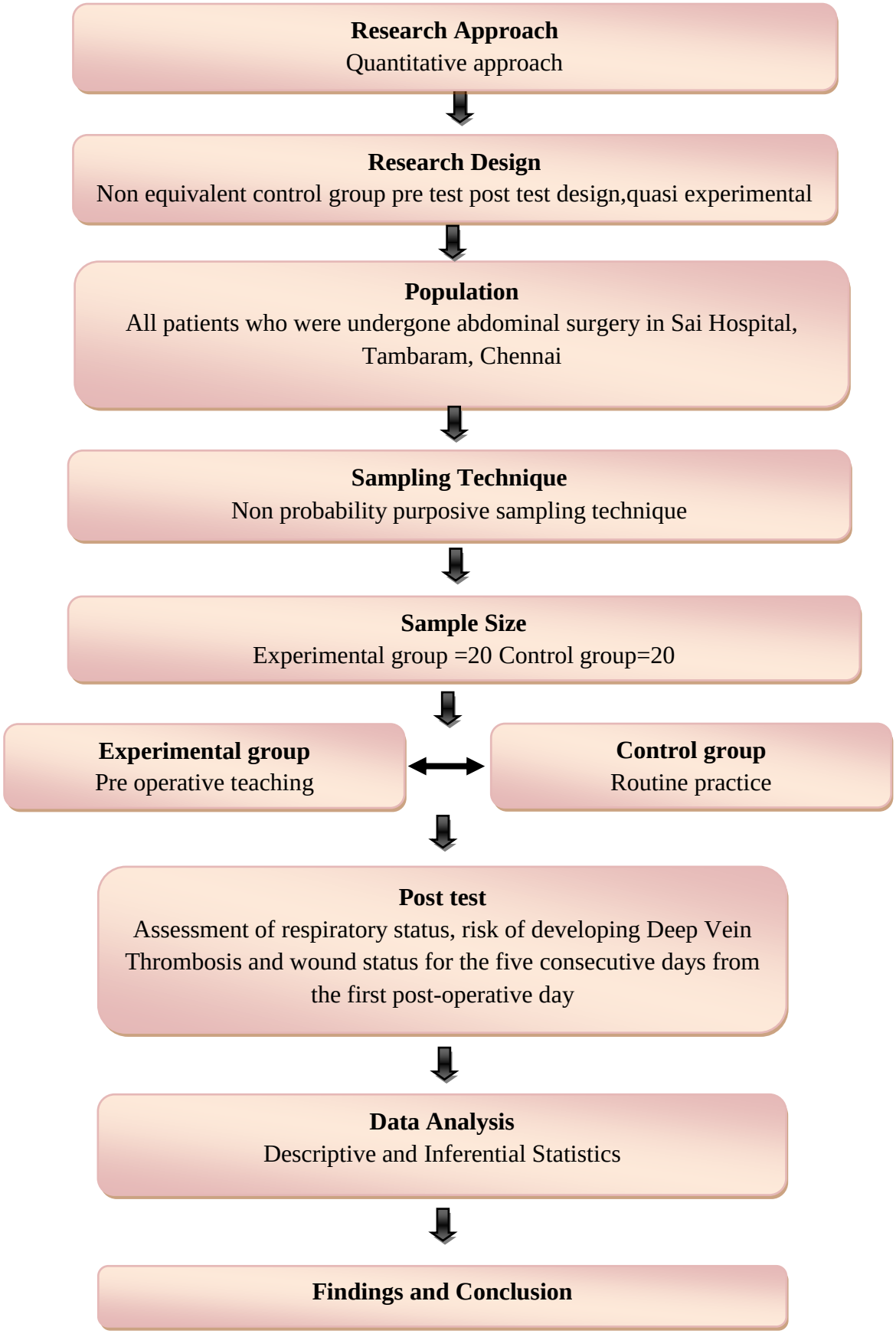

Fig. 3.1 Schematic representation of research methodology

CHAPTER –IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with analysis and interpretation of the data collected from patients undergoing abdominal surgeries, to assess the effectiveness of pre operative teaching on post operative exercises. The findings based on the descriptive and inferential statistical analysis were presented under the following headings:

Section I **:** Data on Distribution of demographic variables of patients subjected to abdominal surgery.

Section II **:** Data on Description about respiratory status of subjects between experimental group and control group.

Section III **:** Data on Comparison of post test scores of respiratory complications between experimental and control group

Section IV **:** Data on Comparison of post test scores of risk of desveloping Deep Vein Thrombosis between experimental and control group.

Section V **:** Data on Comparison of post test wound status scores between experimental and control group.

Section VI **:** Data on Association of demographic variables with post test score of respiratory status, Deep Vein Thrombosis, and wound status of the patients.

SECTION –I

Data on Distribution of demographic variables of patients subjected to abdominal surgery.

Table: 4.1 Frequency & percentage and Distribution of pre test level of knowledge score among sample with their Selected Demographic Variable

(n = 40)

S. No.	Demographic Variables	Experimental Group (n=20)		Control Group (n=20)	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
1.	**Age**				
	a. 21-30 years	6	30	7	35
	b. 31-40 years	5	25	4	20
	c. 41-50 years	4	20	3	15
	d. 51-60 years	5	25	6	30
2.	**Sex**				
	a. Male	6	30	5	25
	b. Female	14	70	15	75
3.	**Education**				
	a. Primary	9	45	7	35
	b. Secondary	7	35	8	40
	c. Higher Secondary	1	5	5	25
	d. Graduate	3	15	0	0
	e. Post graduate	0	0	0	0
4.	**Occupation**				
	a. Student	1	5	0	0
	b. Unemployed	7	35	10	50
	c. Self employed	1	5	0	0
	d. Labour	8	40	8	40
	e. Office worker	3	15	2	10

Cont...

S. No.	Demographic Variables	Experimental Group (n=20)		Control Group (n=20)	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
5.	**Family income per month**				
	a. Rs. 2001-5000	2	10	1	5
	b. Rs. 5001-10,000	15	75	18	90
	c. Rs. >-10,000	3	15	1	5
6.	**Personal Habits**				
	a. Smoking	2	10	2	10
	b. Tobacco and betel chewing	5	25	6	30
	c. Alcohol	4	20	1	5
	d. Nil	9	45	11	55
7.	**Weight of patient**				
	a. 35-45kg	1	5	2	10
	b. 46-55kg	6	30	7	35
	c. 56-70kg	13	65	9	45
	d. >70kg	0	0	2	10
8.	**Height of patient**				
	a. 145-150cm	2	10	2	10
	b. 151-155cm	5	25	12	60
	c. 156-160cm	13	65	5	25
	d. >160cm	0	0	1	5
9.	**Duration of hospitalization**				
	a. 7 days	18	90	19	95
	b. >7 days	2	10	1	5
10.	**Family type**				
	a. Nuclear	13	65	15	75
	b. Joint	7	35	5	25

The data presented in Table 4.1 shows the following result,

Regarding the age 6(30%) were between the age group of 21-30 years, 5(25%) were between 31-40%years, 4(20%) were between 41-50years and 5(25%) were between 51-60years in experimental group, 7(35%) were between 21-30years, 4(20%) were between 31-40 years, 3(15%) were between 41-50years and 6(30%) were between 51-60years for control group.

On considering the sex 6(30%) were males and 14(70%) were females in experimental group, 5(25%) were males and 15(75%) were females in control group.

Regarding the education 9(45%) were Primary classes, 7(35%) were in secondary education, 1(5%) were in higher secondary education and 3(15%) were graduates in experimental group, 7(35%) were primary classes, 8(40%) were in secondary education and 5(25%) were in higher secondary education, in control group.

With regard to the occupation, 1(5%) was student, 7(35%) were unemployed, 1(5%) was self employed, 8(40%) were labours and 3(15%) were office workers in experimental group, 10(50%) were unemployed, 8(40%) were labours and 2(10%) were office workers in control group.

Regarding the monthly family income, 2(10%) had an income between Rs. 2001-5000, 15(75%) had an income between Rs.5001-10,000 and 3(15%) had income above Rs. 10,000 in experimental group, 1(5%) had an income between Rs. 5001-10,000 and 1(5%) had income above Rs.10,000 in control group.

On considering the personal habits 2(10%) were smokers, 5(25%) were having the habit of tobacco and betel chewing, 4(20%) were alcoholics and rest 9(45%) belongs to nil category in experimental group, 2(10%) were smokers, 6(30%) were having the habit of tobacco and betel chewing, 1(5%) was alcoholic and rest 11(55%) belongs to nil category in control group.

With regard to the weight 1(5%) weighed in the range of 35-45kg, 6(30%) in the range of 46-55kg and 13(65%) in the range of 155-160cm in experimental group, 2(10%) were in the range of 145-150cm, 12(60%) in the range of 151-155cm, 5(25%) in the range of 156-160cm and 1(5%) was above 160cm in control group.

On considering the duration of hospitalization, majority of patients 18(90%) stayed in the hospital for 7days and rest 2(10%) stayed for more than 7days in experimental group, 19(95%) stayed in the hospital for 7days and 1(5%) stayed for more than 7days in control group.

With regard to the type of family 13(65%) belongs to nuclear family and 7(35%) belongs to joint family in experimental group, 15(75%) belongs to nuclear family and 5 (25%) belong to joint family in control group.

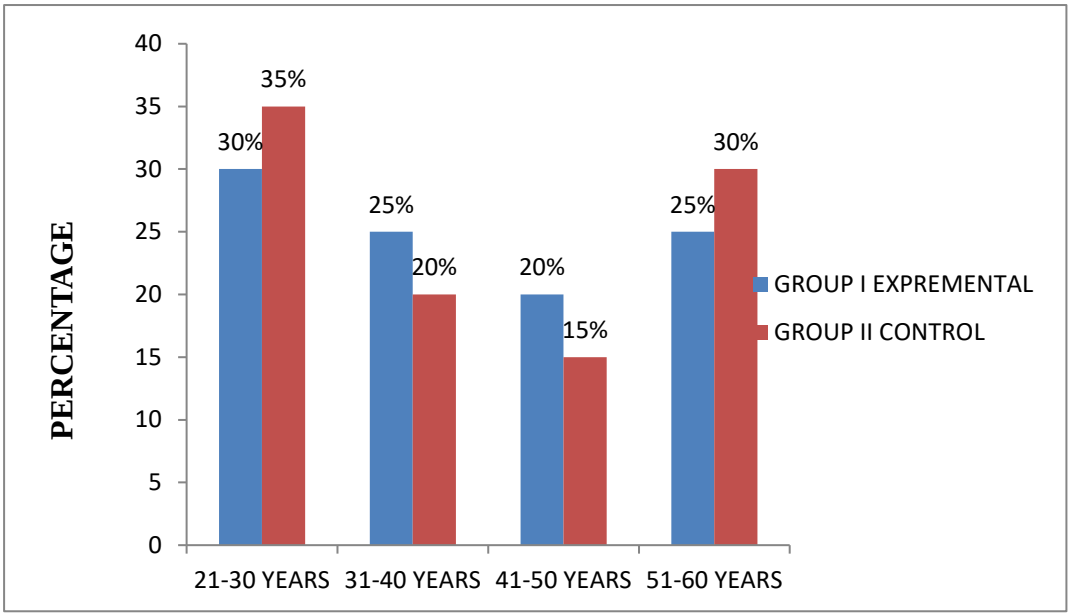

Fig.4.1 A Bar diagram showing the percentage distribution of demographic variables according to the age in the experimental and control group

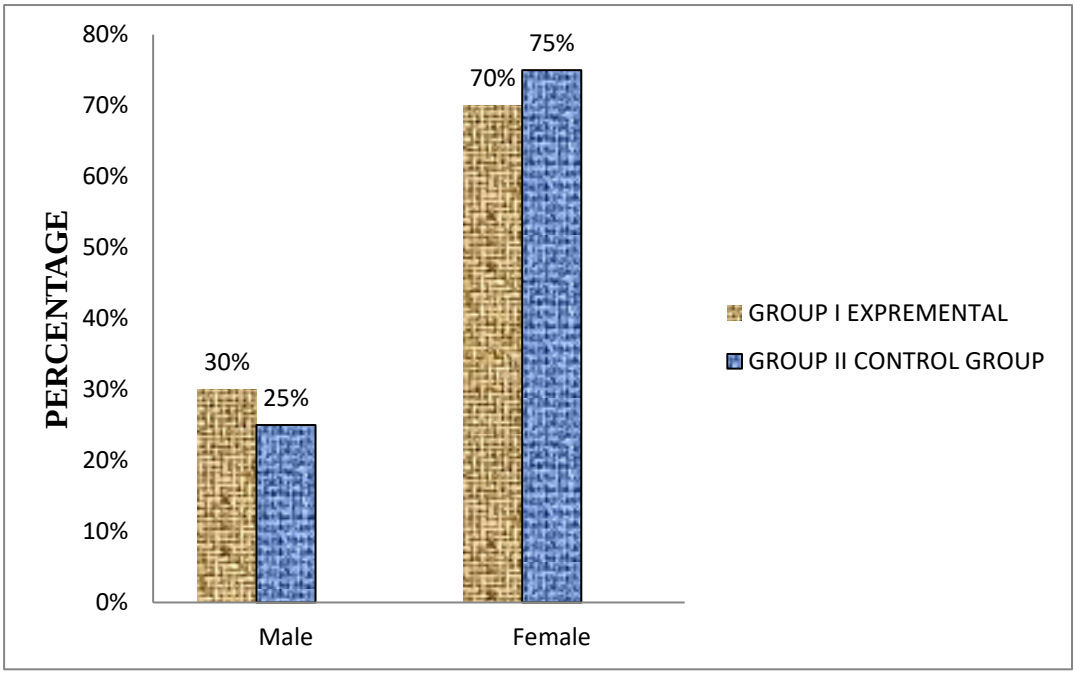

Fig.4.2 A Bar diagram showing the percentage distribution of demographic variables according to the gender in the experimental and control group

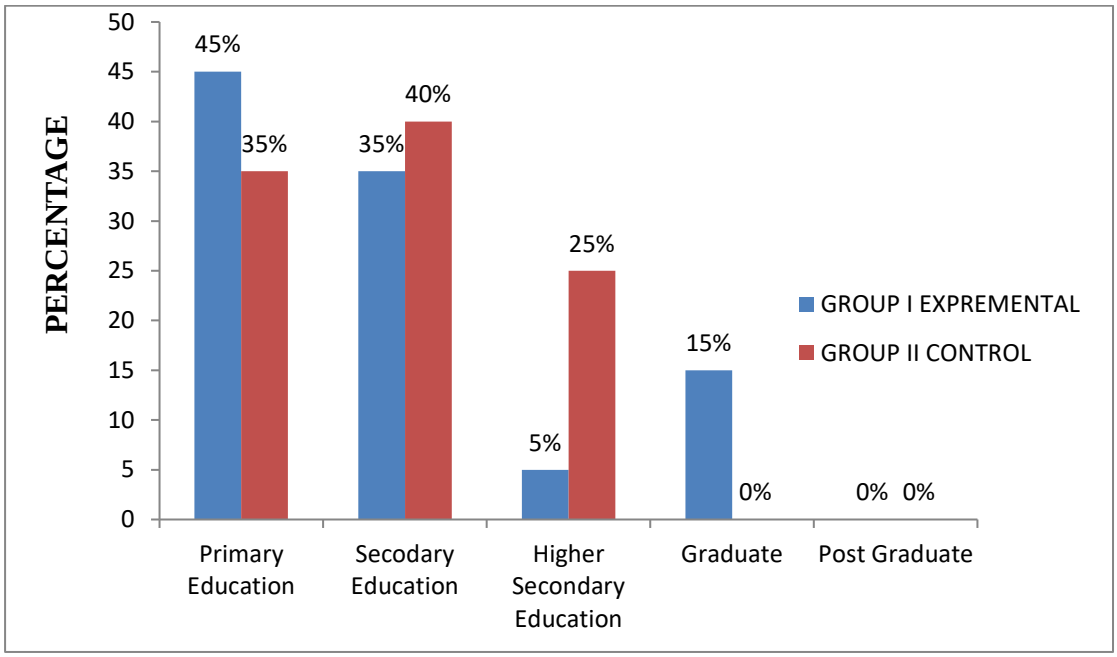

Fig.4.3 A Bar diagram showing the percentage distribution of demographic variables according to the educational status in the experimental and control group

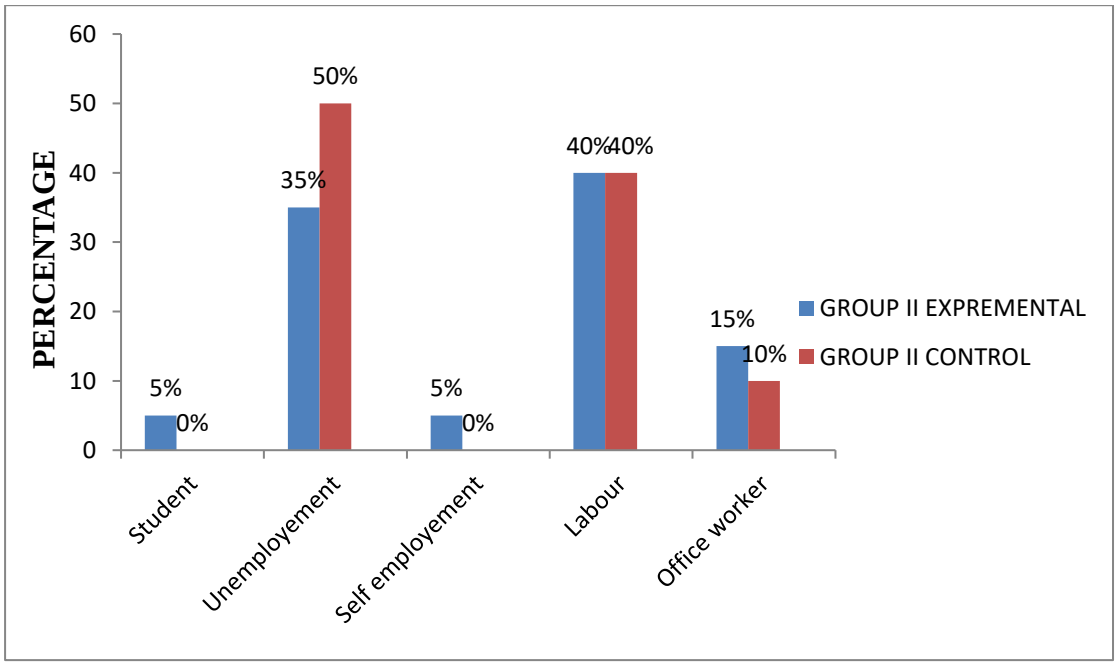

Fig.4.4 A Bar diagram showing the percentage distribution of demographic variables according to the occupation in the experimental and control group

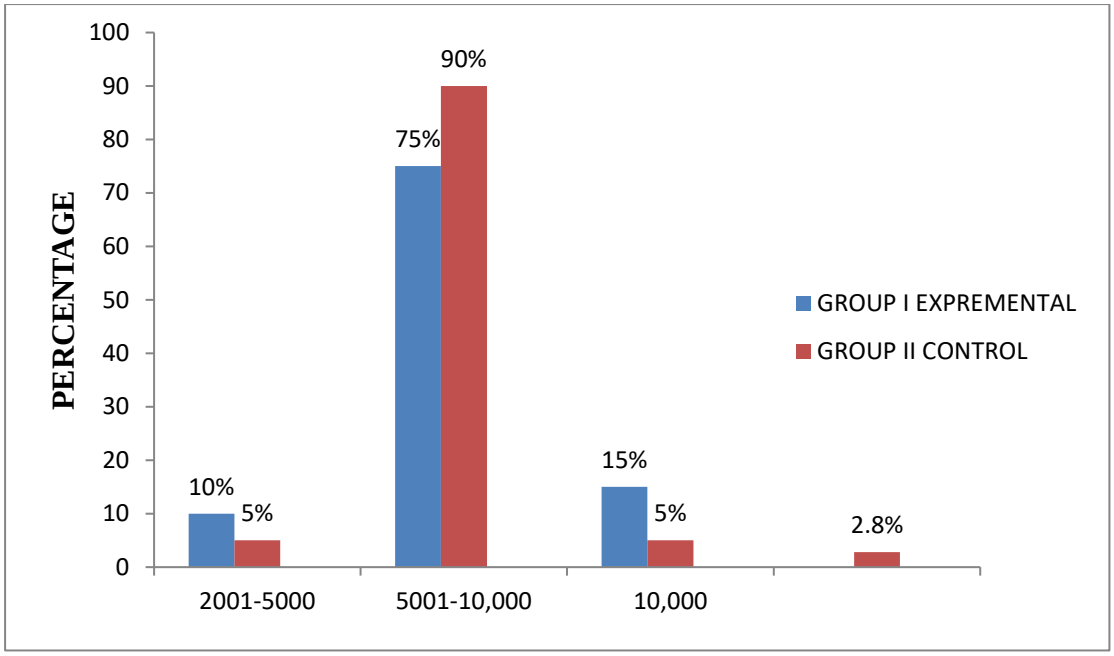

Fig. 4.5 A Bar diagram showing the percentage distribution of demographic variables according to the family income in the experimental and control group

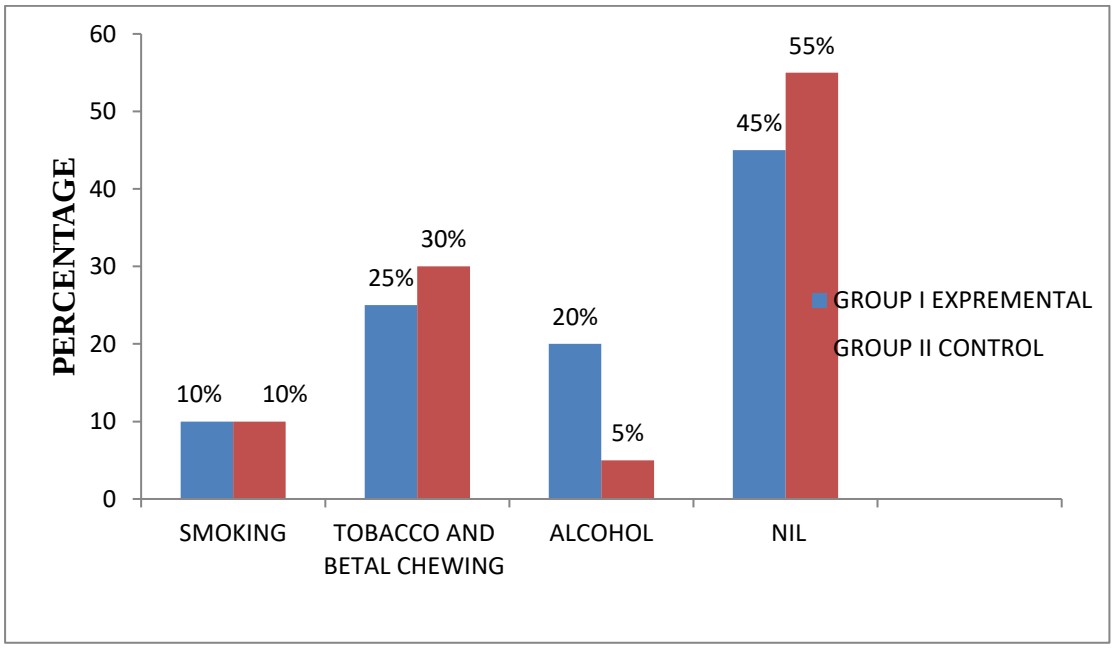

Fig.4.6 A Bar diagram showing the percentage distribution of demographic variables according to the personal habits in the experimental and control group

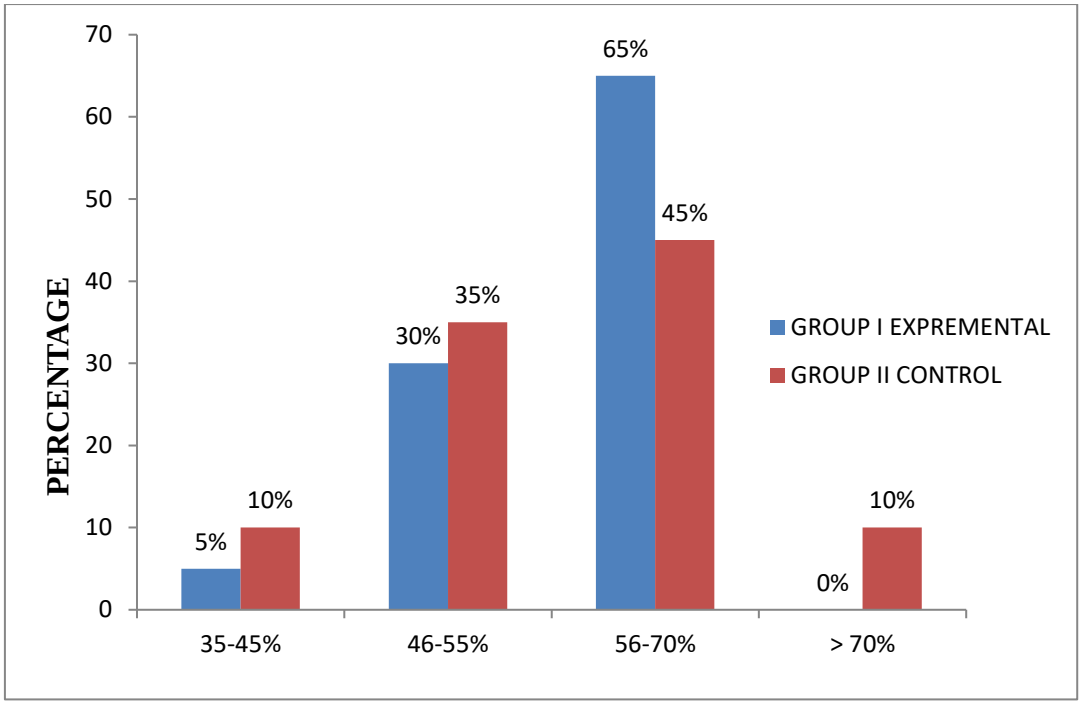

Fig.4.7 A Bar diagram showing the percentage distribution of demographic variables according to the weight of patient in the experimental and control group

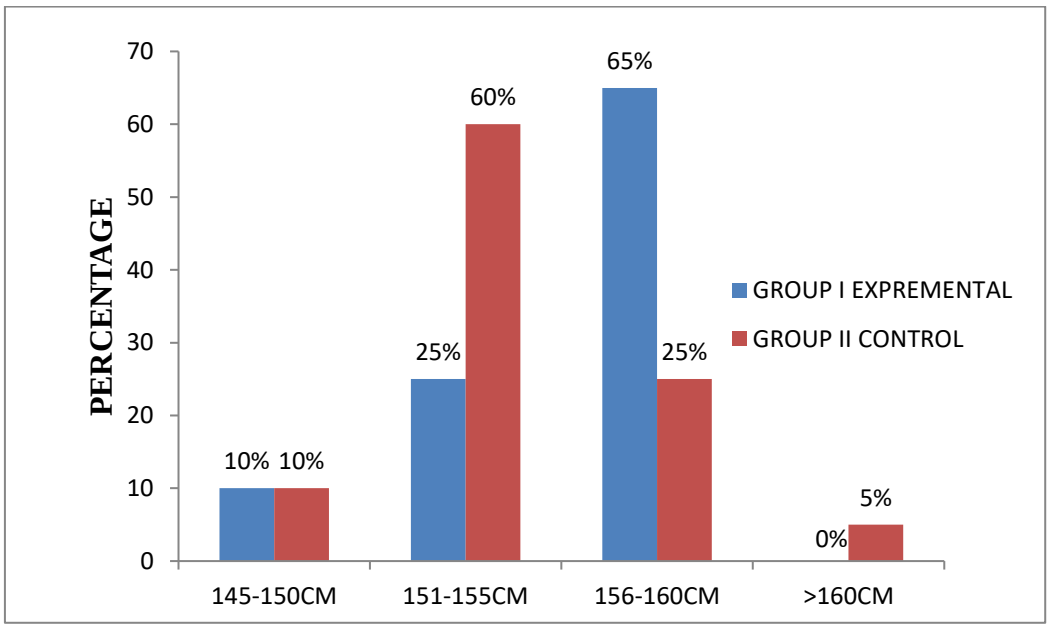

Fig. 4.8 A Bar diagram showing the percentage distribution of demographic variables according to the height of patient in the experimental and control group

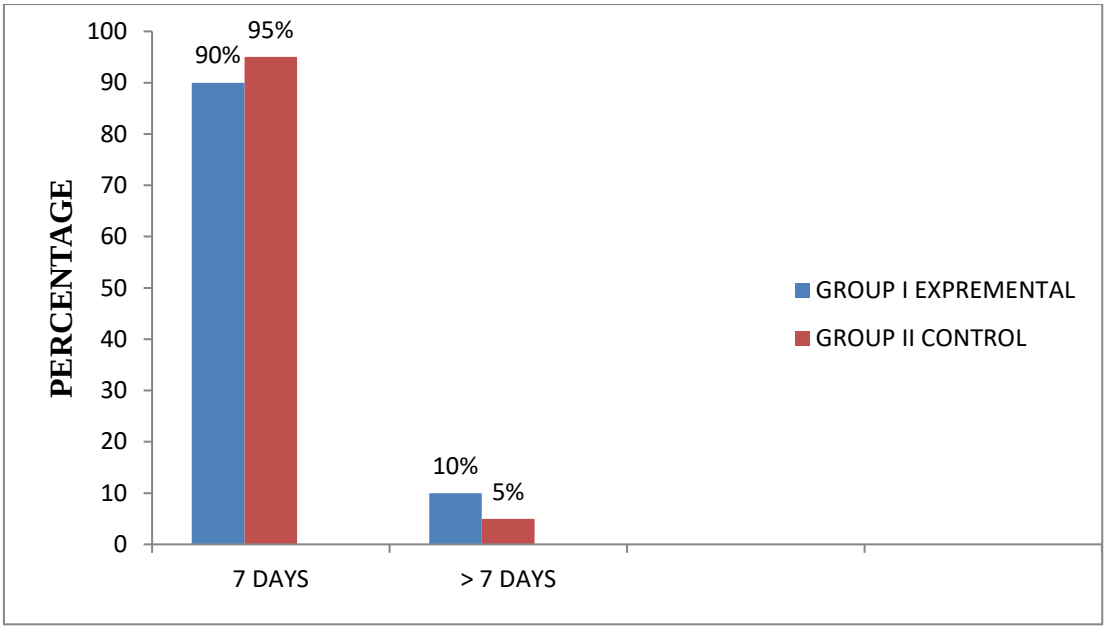

Fig.4.9 A Bar diagram showing the percentage distribution of demographic variables according to the duration of hospitalization in the experimental and control group

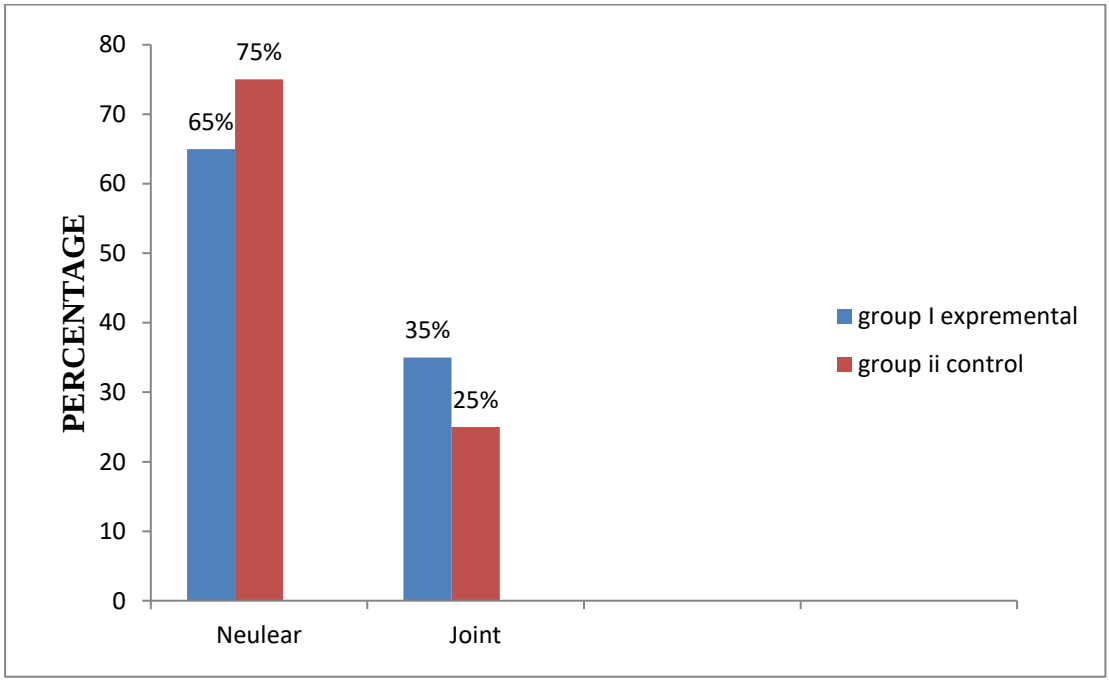

Fig.4.10 A Bar diagram showing the percentage distribution of demographic variables according to the family type in the experimental and control group

SECTION – II

Table 4.2 Data on value of Respiration Mean, Median &Standard deviation and "t" value of respiratory Status of subjects between the experimental group before Surgery.

(n = 40)

S. No	Group	Mean	Mean difference	SD	't' value
1.	Experimental	24.5	1	2.8	1.367*
2.	Control	23.5		1.5	

*Significance at 0.05 level

Table 4.2 shows that the mean score of experimental group and control group was 24.5 and 23.5. The obtained't' value 1.367 was less than the table value 1.367 was less than the table value (1.960). This finding reveals than there is homogeneity exists among experimental and control group before providing pre operative teaching.

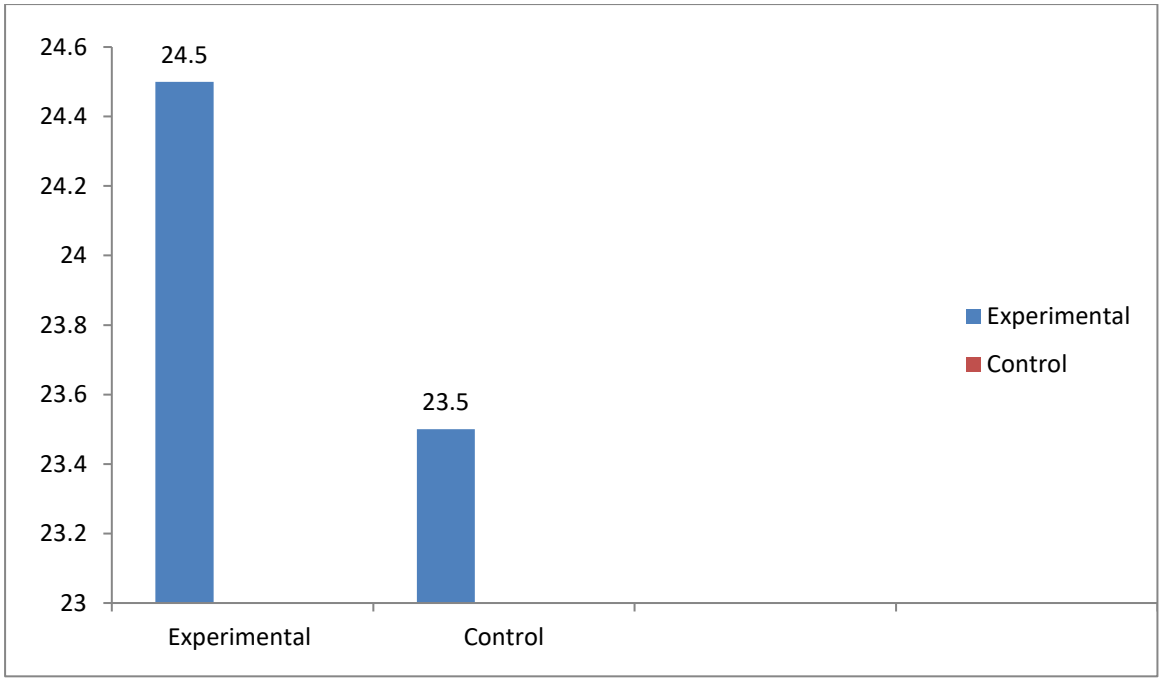

Fig.4.11 comparison of mean score of preoperative respiratory status of experimental and control group

Table 4.3 Mean Standard Deviation &'t' Value of Respiratory Status of Subjects between the Experimental and Control Group after Surgery

S. No	Group	Mean	SD	't'
1.	Experimental	30.6	1.97	10.85*
2.	Control	24.35	1.66	

*Significance at 0.05 level

Table 4.3 shows that the mean score of respiratory status after the abdominal surgery of experiment group was 30.6 and that of control group was 24.35. The calculated "t" value 10.85 is greater than table value (1.960). It shows that pre-operative teaching was found to be effective in improving the post-operative respiratory status of experimental group.

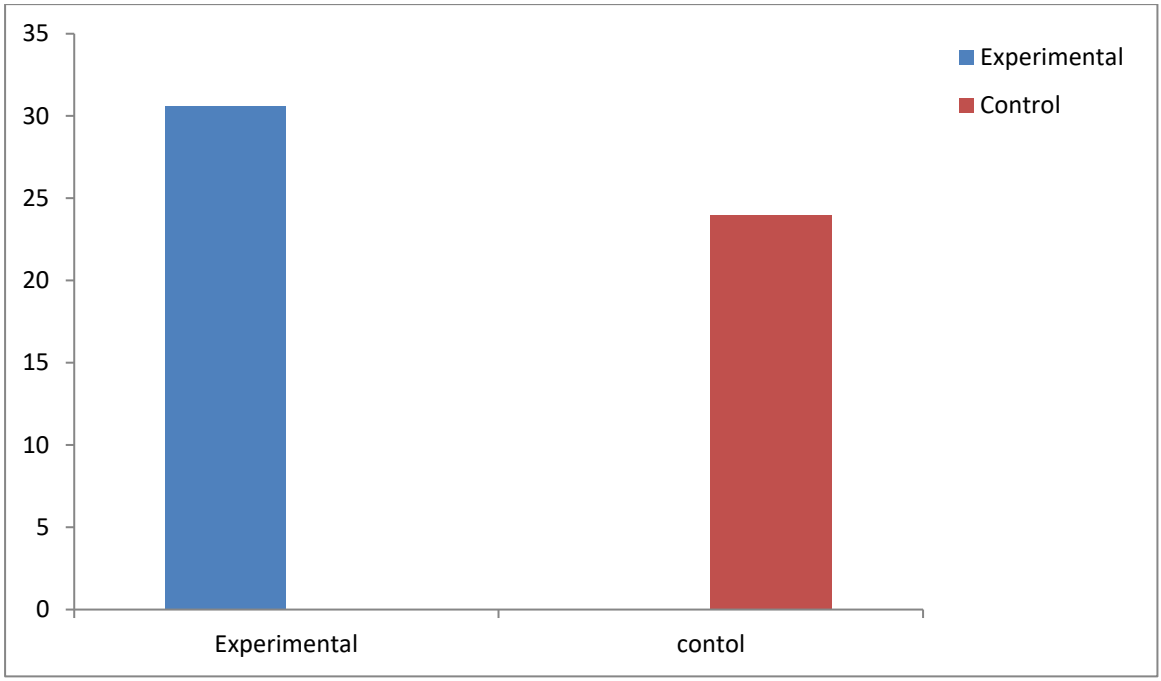

Fig.4.12 Comparison of mean score of postoperative respiratory status of experimental and control group

SECTION - III

Table 4.4 Comparison of Post Test Score of Respiratory Complication of Subjects Between Experimental Group and Control Group

(n = 40)

S. No	Group	Mean	SD	't' value
1.	Experimental	11.3	1.71	2.54*
2.	Control	13	1.94	

*Significance at 0.05 level

Table 4.4 shows that the post test score of respiratory complication after abdominal surgery in experimental group was 11.3 and that of control group was 13. The calculated 't' value was 2.54 was significant at 39 degrees of freedom and at 0.05 level of significant which is greater than table value (1.960). It shows that pre operative teaching was effective in preventing post operative respiratory complications.

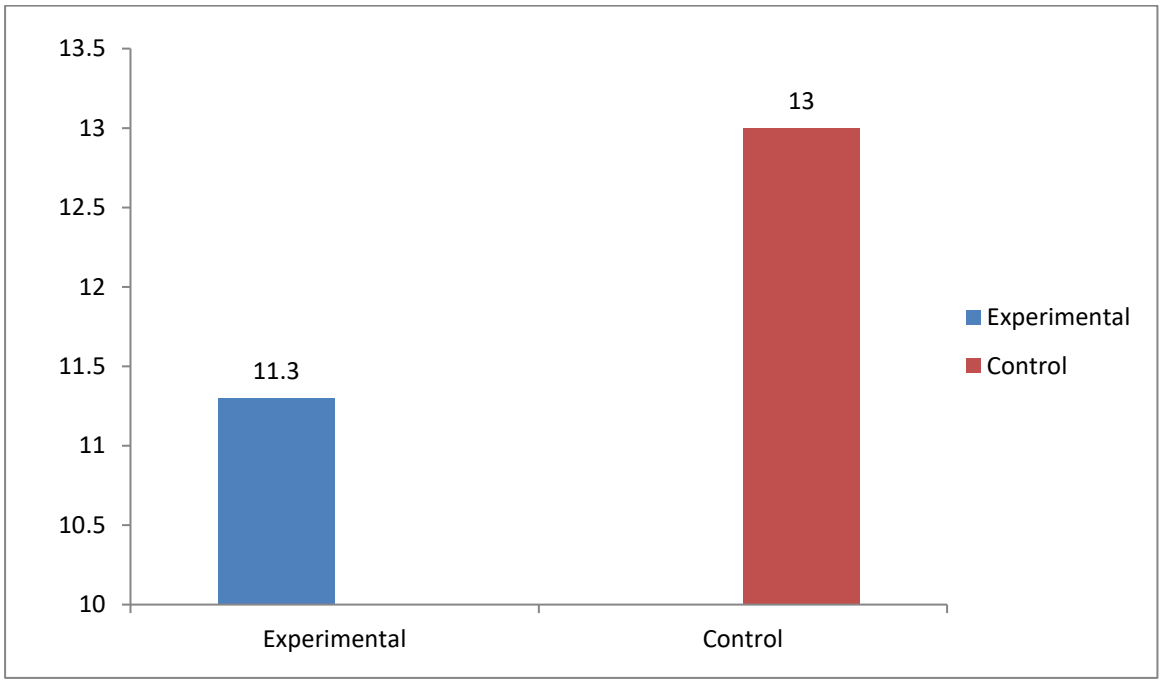

Fig.4.13 Comparison of post test score of respiratory complication of experimental and control group

SECTION – IV

Table 4.5 Comparison of Post Test Score of Risk of Deep Vein Thrombosis Between Experimental and Control Group

S. No	Group	Mean	SD	't' value
1.	Experimental	11.5	1.93	2.55
2.	Control	13.2	1.41	

* Significance at 0.05 level

Table 4.5 shows that the post test Deep Vein Thrombosis risk score of experimental group was 11.5 and that of the control group was 13.2. The calculated 't' value was 2.55 at 39 degrees of freedom and at 0.05% level of significance which is greater than table value (1.960). It reveals that pre operative teaching on post operative exercises had a significant effect in reducing the risk of developing DVT among the experimental group.

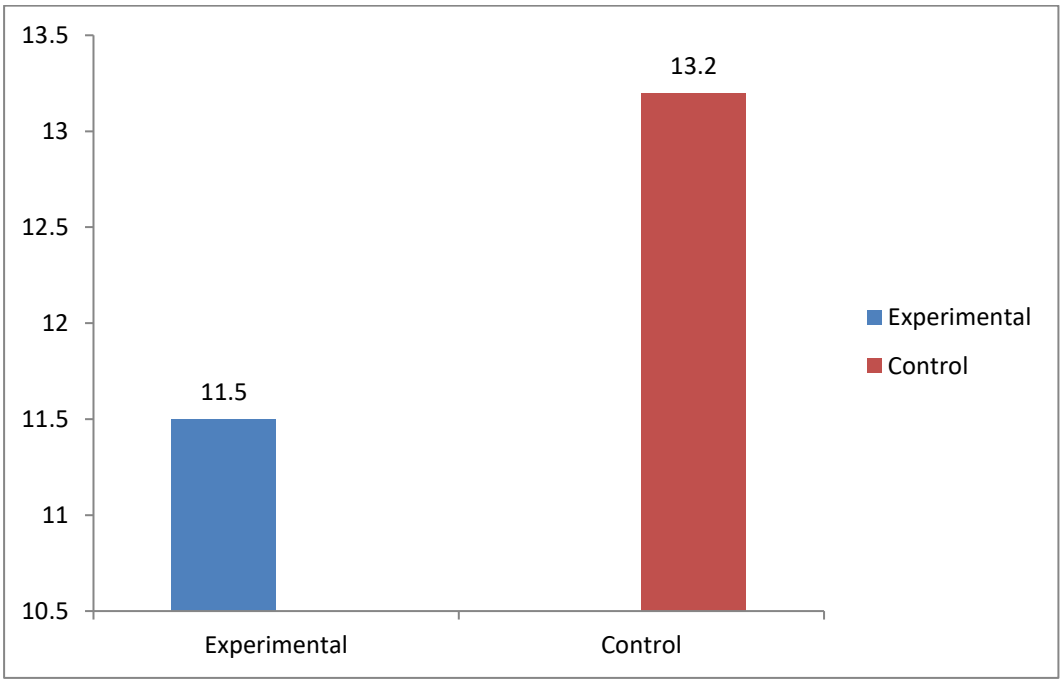

Fig.4.14 Comparison of post test score of deep vein thrombosis of experimental and control group

SECTION –V

Table 4.6 Mean Standard deviation, Mean Difference and 't' Value and Comparison of Post Test Score of Wound Status Between Experimental and Control Group

(n = 40)

S. No	Group	Mean	MD	Mean	SD	't' value
1.	Experimental	60.55	10.1	60.55	1.76	4.112*
2.	Control	50.45		50.45	2.78	

*Significance at 0.05 level

Table 4.6 shows that the post test wound status score of experimental group was 60.55 and that of control group score was 50.45. The calculated't' value was 4.112 at 39 degrees of freedom and at 0.05% level of significance which is greater than table value (1.960). It reveals that pre operative teaching on post operative exercises played a significant role in improving the wound status in experimental group.

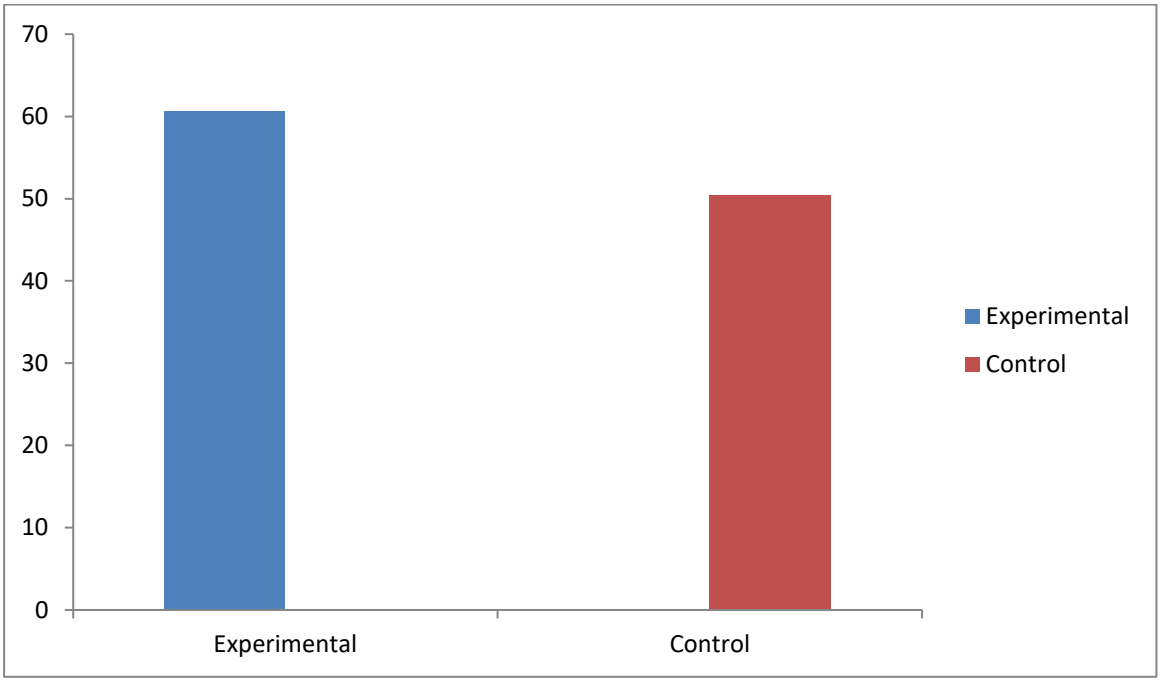

Fig.4.15 Comparison of post test score of wound status of experimental and control

group

SECTION – VI

Table 4.7 Data on Association of Demographic Variables With Respiratory Status of Patients

(n = 20)

S. No	Demographic Variables	Above Mean	Below Mean	X^2
1.	**Age**			
	a. 21-30 years	5	1	
	b. 31-40 years	2	3	3.88
	c. 41-50 years	1	3	df=3
	d. 51-60 years	3	2	
2.	**Sex**			
	a. Male	3	3	0.074
	b. Female	8	6	df=1
3.	**Education**			
	a. Primary	6	3	
	b. Secondary	3	4	3.159
	c. Higher Secondary	0	1	df=4
	d. Graduate	2	1	
	e. Post graduate	0	0	
4.	**Occupation**			
	a. Student	0	1	
	b. Unemployed	5	2	3.43
	c. Self employed	0	1	df=4
	d. Labor	4	4	
	e. Office worker	2	1	
S. No	**Demographic Variables**	**Above Mean**	**Below Mean**	X^2

Cont...

5.	**Family income per month** a. Rs. 2001-5000 b. Rs. 5001-10,000 c. Rs. >-10,000	1 9 1	1 6 2	0.72 df=2
6.	**Personal Habits** a. Smoking b. Tobacco and betel chewing c. Alcohol d. Nil	1 3 1 7	1 2 3 2	3.29 df=3
7.	**Weight of patient** a. 35-45kg b. 46-55kg c. 56-70kg d. >70kg	1 3 7 0	0 3 6 0	0.706 df=3
8.	**Height of patient** a. 145-150cm b. 151-155cm c. 156-160cm d. >160cm	2 2 7 0	0 3 6 0	20.323* df=3

* Significant

Table 4.7 shows the association of demographic variable with post test scores of respiratory status of the experimental group. The X^2 value of height was 20.323 at 3 of degree of freedom and significant at 0.05 level. This shows that the height of patient was associated with respiratory status of patients.

Table4.8 Association of Demographic Variables with Risk of Developing Deep Vein Thrombosis Among the Patients

S. No	Demographic variables	Above Mean	Below Mean	X^2

1.	**Age** a. 21-30 years b. 31-40 years c. 41-50 years d. 51-60 years	2 2 1 3	4 3 3 2	1.3 df=3
2.	**Sex** a. Male b. Female	1 7	5 7	1.93 df=1
3.	**Education** a. Primary b. Secondary c. Higher Secondary d. Graduate e. Post graduate	4 2 1 1 0	5 5 0 2 0	1.98 df=4
4.	**Occupation** a. Student b. Unemployed c. Self employed d. Labor e. Office worker	1 6 0 0 1	0 1 1 8 2	13.62* df=4
5.	**Family income per month** a. Rs. 2001-5000 b. Rs. 5001-10,000 c. Rs. >-10,000	0 6 2	2 9 1	2.21 df=2
6.	**Personal Habits** a. Smoking	0	2	5.19 df=3

	b. Tobacco and betel chewing	1	4	
	c. Alcohol	1	3	
	d. Nil	6	3	
7.	**Weight of patient**			2.47
	a. 35-45kg	1	0	df=3
	b. 46-55kg	1	5	
	c. 56-70kg	6	7	
	d. >70kg	0	0	
8.	**Height of patient**			1.11
	a. 145-150cm	1	1	df=3
	b. 151-155cm	1	4	
	c. 156-160cm	6	7	
	d. >160cm	0	0	

Table 4.8 shows the association of demographic variable with the risk of developing Deep Vein Thrombosis of the experimental group. The x2 value oof occupation was 13.62 at 4 degrees of freedom significant at o.05 level. This shows that occupations of patients are associated with the risk of developing Deep Vein Thrombosis. The other variables like age, sex, education, income, personal habits and weight were not associated with the risk of developing Deep Vein Thrombosis.

Table.9 Data on Association of Demographic Variables With Wound Status Score of Patients

(n = 20)

S. No	Demographic Variables	Above Mean	Below Mean	X2
1.	**Age**			
	21-30 years	6	0	
	31-40 years	3	2	4.984
	41-50 years	3	1	df=3
	51-60 years	2	3	
2.	**Sex**			0.71
	Male	5	1	df=1
	Female	9	5	
3.	**Education**			
	Primary	4	5	
	Secondary	6	1	5.29
	Higher Secondary	1	0	
	Graduate	3	0	df=4
	Post graduate	0	0	
4.	**Occupation**			
	Student	1	0	4.276
	Unemployed	1	2	df=4
	Self employed	3	2	
	Labour	4	0	
	Office worker	5	2	
5.	**Family income Per month**			

Cont...

	Rs. 2001-5000 Rs. 5001-10,000 < Rs. 10,000	2 5 2	0 10 1	4.02 df=2
6.	**Personal Habits** Smoking Tobacco and betel chewing Alcohol Nil	 2 5 2 5	 0 0 2 4	 4.62 df=3
7.	**Weight of Patient** 35-45kg 46-55kg 56-70kg >70kg	 0 0 8 0	 1 6 5 0	 7.49 df=3
8.	**Height of patient** 145-150cm 151-155cm 156-160cm >160cm	 1 5 8 0	 1 0 5 0	 19.39* df=3

***Significant**

Table 4.9 shows the association of demographic variable with the wound status scores of the experimental group. The X2 value of height was 19.39 at 3 degrees of freedom significant at 0.05 level. This shows that the height of patients are associated with the wound status.

CHAPTER-V

FINDINGS AND DISCUSSION

This study aimed at assessing the effectiveness of pre operative teaching on Post operative exercises in preventing selected post operative complications of patients subjected to abdominal surgeries. Post operative teaching of deep breathing, coughing and leg exercises reduce the pre operative complications. The results of the study are based on the statistical analysis. The results of the study are based on the statistical analysis. The data were collected with the help of observational checklist.

This is a Quantitative study intended to assess the effectiveness of pre operative teaching on post operative exercises and to prevent selected post operative complications of patients who were undergoing abdominal surgeries.

5.1 The First Objective of the Study was to assess the Respiratory Status of the Patients Subjected to Abdominal Surgery in experimental and Control Group pre operatively

An observational checklist which included 34 questions were used for assessing respiratory status of patients pre operatively. The mean score of experimental group was 24.5 and the mean score of the control group was 23.5. The obtained t value 1.367 is less than the table value (1.960). This findings reveals that there is a homogeneity exists among experimental and control group before providing preoperative teaching.

5.2 The Second Objective of the Study was to Assess Respiratory Status, Risk of Developing Deep Vein Thrombosis, Wound Status of Patients Undergoing Abdominal Surgery Post operatively

To assess the respiratory status of subjects, observational checklist of 34 questions were used. The mean score of the experimental group was 30.6, and the mean score of the control group was 24.35. It shows that pre operative teaching of deep breathing exercise was significantly effective in improving the respiratory status of the experimental group.

The mean respiratory complication score of experimental group (11.3) was less than the control group (13). It reveals that the pre operative teaching of coughing and deep breathing exercises was effective in reducing the post operative chest complications among patients in experimental group.

The mean risk score of developing Deep Vein Thrombosis of experimental group was 11.5 and that of control group was 13.2. It indicated that post operative leg and turning exercises reduces the risk of developing Deep Vein thrombosis among the subjects of experimental group.

A modified Wound Assessment Parameter Scoring Tool (WAPST) was used to assess the wound status of the patients. The mean score of the experimental group was 60.55 higher than the mean score of control group 50.45 It implies that pre operative teaching on post operative exercises played a significant role in improving the wound status among the subjects of experimental group.

5.3 The Third Objective of the Study Was to Compare the Post operative Respiratory Status Risk of Developing Deep Vein Thrombosis Wound Status Between Control and Experimental Group.

The mean respiratory status score of experimental group 30.6 is higher than the mean respiratory status score of the control group 24.35. The obtained 't' value 10.85 at df (39) was significant at 0.05 level. It implies that the pre operative teaching on deep breathing exercises were found to be effective in improving the post operative respiratory status of the experimental group.

The mean respiratory complication score of experimental group (11.3) was less than the control group (13). The obtained 't' value 2.54 at df (39) was significant at 0.05 level. It reveals that the pre operative teaching of coughing and deep

breathing exercises was effective in reducing the post operative chest complications among patients in experimental group.

A form of checklist which included 8 questions was used for assessing the risk of developing Deep Vein Thrombosis. The mean score of the experimental group was 11.5 and the mean score of control group was 13.2. The obtained 't' value 2.55 at df (39) was significant at 0.05 level. It indicated that post operative leg and turning exercises reduces the risk of developing Deep Vein Thrombosis among the subjects of experimental group than the control group.

A modified wound assessment parameter scoring tool (WAPST) was used to assess the wound status of the patient. The mean score of the experimental group was 60.55 higher than the mean score of control group 50.45. The obtained 't' value 4.112 at df (39) was significant at 0.05 level. It implies that post operative exercises played a significant at 0.05 level. It implies that post operative exercises played a significant role in improving the status among the subjects of experimental group.

A modified Wound Assessment Parameter Scorning Tool (WASPST) was used to assess the wound status of the patients. The mean score of control group was 60.55 higher than the mean score of control group 50.45. The obtained 't' value 4.112 at df (39) was significant a 0.005 level. It implies that post operative exercise played a significant role in improving the wound status among the subjects of experimental group.

5.4 The Fourth Objective was to Associate Respiratory Status, the Risk of Developing Deep Vein Thrombosis Score, Wound Status Scores of Patients after Abdominal Surgeries with Selected Demographic Variables

The demographic habits, height and weight were associated with post test score of respiratory status, risk of developing Deep Vein Thrombosis and wound status.

There was significant association of height with post test score of respiratory status, occupation with post test score of risk of development Deep Vein Thrombosis and also height and weight with post test score of wound status. All other variables

showed no significant association with post test score of respiratory status, risk of developing Deep Vein Thrombosis and wound status score.

CHAPTER VI

SUMMARY, CONCLUSION, NURSING IMPLICATONS, LIMITATIONS AND RECOMMENDATIONS

6.1 SUMMARY

The study was conducted to determine the effectiveness of pre operative teaching on post operative exercises to prevent selected post operative complications of patients subjected to abdominal surgeries at Sai Hospital, Chennai.

OBJECTIVES

- To assess the respiratory status of the patients subjected to abdominal surgery in experimental and control group pre operatively
- To assess respiratory status, risk of developing deep vein thrombosis, wound status of patients undergoing abdominal surgery post operatively
- To compare the post operative respiratory status, risk of developing deep vein thrombosis, wound status between control group and experimental group
- To associate respiratory status, the risk of developing deep vein thrombosis score, wound status scores of patients after abdominal surgeries with selected demographic variables

HYPOTHESIS

H_1 -There will be a significant difference between pre test and post test of respiratory status among the patients undergoing abdominal surgery in experimental and control group.

H_2 -There will be a significant different between post test risk of developing deep vein thrombosis and wound status of patient undergoing abdominal surgery in experimental and control group.

H_3 -There will be a significant relationship between pre-operative teaching and post-operative exercises to prevent selected post-operative complications.

H_4 - There will be a association between post test level of respiratory status, deep vein thrombosis and wound status with selected demographic variables in experimental group.

Major Findings of the Study were as Follows

In this study, assessment was done with the help of structured questionnaire to prevent the complication among patients undergoing abdominal surgeries. The objective were analyzed by using inferential and descriptive statistics.

The mean "t" value for the respiratory status of both experimental and control group after surgery 10.85 was higher than the status of both experimental and control group before surgery.

There was association of height with respiratory and wound status, and occupation with risk of developing Deep Vein Thrombosis.

The mean score of experimental group and control group was 24.5 and 23.5. The obtained 't' value 1.367 was less than the table value 1.367 was less than the table value (1.960). This finding reveals than there is homogeneity exists among experimental and control group before providing pre operative teaching.

The mean score of respiratory status after the abdominal surgery of experimental group was 30.6 and that of control group was 24.35. The calculated "t" value 10.85 is greater than table value (1.960). It shows that pre-operative teaching

was found to be effective in improving the post-operative respiratory status of experimental group

The post test score of respiratory complication after abdominal surgery in experimental group was 11.3 and that of control group was 13. The calculated 't' value was 2.54 was significant at 39 degrees of freedom and at 0.05 level of significant which is greater than table value (1.960). It shows that pre operative teaching was effective in preventing post operative respiratory complications.

The post test Deep Vein Thrombosis risk score of experimental group was 11.5 and that of the control group was 13.2. The calculated 't' value was 2.55 at 39 degrees of freedom and at 0.05% level of significance which is greater than table value (1.960). It reveals that pre operative teaching on post operative exercises had a significant effect in reducing the risk of developing DVT among the experimental group.

The post test wound status score of experimental group was 60.55 and that of control group score was 50.45. The calculated 't' value was 4.112 at 39 degrees of freedom and at 0.05% level of significance which is greater than table value (1.960). It reveals that pre operative teaching on post operative exercises played a significant role in improving the wound status in experimental group.

The association of demographic variable with post test scores of respiratory status of the experimental group. The x2 value of height was 20.323 at 3 of degree of freedom and significant at 0.05 level. This shows that the height of patient was associated with respiratory status of patients.

6.2Conclusion

The respiratory status of the patients who received pre operative teaching on post operative exercise was significantly higher than the patients who did not receive pre operative teaching on post operative exercises.

The post operative complications of the patients who received pre operative teaching on post operative exercise was significantly less than those who did not

received pre operative exercises was significantly higher than those patients who did not received pre operatively. Hence alternative hypothesis is accepted.

The demographic variables such as age, sex, education, personal habits, family income and weight shown no significant association, where as height showed a significant association with respiratory and wound status, and occupation with risk of developing Deep Vein Thrombosis among patients in experimental group.

6.3 Nursing Implications

Abdominal surgeries and the complications arising after the surgery due to the anesthesia, prolonged bed rest, wound infections etc can be prevented in various aspects. One method is keeping the client informed regarding the post operative exercises, care, diet etc, In this context nurses have a major role to play in helping the clients to prevent complications like atelectasis, pneumonia, Deep Vein Thrombosis and wound infections. The findings of the study have implications on nursing practices, nursing education, nursing administration and nursing research.

Nursing Practice

- Nurses can be encouraged to impart pre operative teaching on post operative exercises to improve the standard of care and to prevent the complications
- Self care activities can be included to promote early ambulation.
- The practice of pre operative teaching on post operative exercises reduces the respiratory complications, risk of developing Deep Vein thrombosis, improves the wound status, and improvement of health reduces the hospitalization.

Nursing Administration

The health administrators should be able to motivate and initiate the health personnel in organizing and participation in various educational programmes.

- The administrator serves as a resource person for young nursing students, clients ant relatives for providing guidance and counselling for surgical patients.

- In service education programme should be organized for nurses to develop up to date knowledge regarding post operative exercises.
- The nurse administrator should make arrangement for sufficient manpower, money and material which are disseminating information regarding post operative exercises.

Nursing Education

- Providing planned teaching programme must be emphasized in the nursing curriculum. So that the student will be aware about the importance of programme of surgical clients.
- The curriculum of nursing education should enable the student nurse equip themselves within the knowledge of clients their post operative care.
- The nurse educator should provide in-service education to the nursing personnel to update their knowledge on post operative.
- The education system should emphasize the application of theory into practice.
- Periodic Conferences, Seminars and Symposia and be arranged regarding post operative care and exercises to make nursing professional competent enough to meet ever changing needs of the society.

Nursing Research

- The findings of present study can be a foundation to conduct study on large population to strongly prove the efficacy of pre-operative teaching on post operative exercises.
- Extensive research must be conducted in this area to identify the physiological effects of post operative exercise in improving post operative recovery.
- It can be used as motivation for nurses to conduct research in future in comparing different post operative exercise and other maneuvers.

6.4 Limitations

- The size of the sample was small to draw generalization.
- The researcher could not use randomized sampling technique in this study.
- Further assessments cannot be carried out due to prescribed period.

- Assessments at a fixed time schedule were not possible because of hospital policies.

6.5 Recommendations

- A similar study can be conducted for a large group as a long term basis.
- A similar study can be conducted with randomization.
- A similar study can be conducted to assess the effectiveness of early ambulation and exercise in preventing Deep Vein Thrombosis can be done.

REFERENCE

Books

- Agaraval, L.P. (2016). Modern Education Research. (1st edition). New Delhi: Dominant Publishers and Distributers.
- Basavanthappa, B.T. (2013). Medical Surgical Nursing. (5th edition). New Delhi: Jaypee Brothers Medical Publishers.
- Beare & Myres, (2003). Adult Health Nursing. (3rd edition). Philadelphia: Mosby Company.
- Black, J.M., & Jacobs, E. M (2011) Medical Surgical Nursing. Clinical Management of Continuity of Care. (9th edition). Philadelphia: W.B Saunders Company.
- Choudury, B, & Bose, A .K. (2014). A Hand Book of Physiotherapy. (4th edition). New Delhi: Jaypee Brothers Medical Publishers.

- Davidson, (2012). Principles and Practice of Medicine. (19th edition). New York: Churchil Livingstone Publishers.
- Dugas, (1983). Introduction to Patient Care. (4th edition). Philadelphia: W: B. Saunder Company.
- Golwall. (1994). Medicine for Students. (16th edition). Bombay: India Printing House.
- Gupta S.P (2014). Statistical Methods. (32nd edition). New Delhi: Sulthanchand and Sons Education Publishers.
- Hollaway, N.M (2012). Medical Surgical Care Planning. (5th edition). Pennsylvania: Springhouse Publishers.
- Ignastsvicius, D.D. & Linda, W. (2014). Text Book of Medical Surgical Nursing. (4th edition). Philadelphia: WB Saunders Company.
- Ghai, O.P. (2012). Essential of Surgery. (12th edition). New Delhi: Gai Publishers.
- Jenny, L.W. (1995). Current issue in Surgery. (5th edition). New York: Churchill Livingstone Publications.
- Joan, B. (1985). Surgical Nursing. (1st edition). London: Butler Publishers.
- John P.S (1995). Clinical Surgery in General. (3rd edition). England: Harcourt Publisher.
- Jurey Guptae (1999). Recent Advance in Surgery.(1st edition). New Delhi : Saunders Publishers.
- Kemp, et. Al. (1989). Fundamentals of Nursing. (2nd edition). London: Scott, Foresman and Company.
- Kozier, et.al. (2001). Fundamentals of Nursing, Concept, Process and Practice. (9th edition). California: Addison-Wesley Nursing.
- Lewis, A.M., & Heit Kemper, M.M. (2014). Medical Surgical Nursing Assessment and Management of Clinical Problems. (9th edition). London: Mosby Publishers.
- Manelkar R.K. (2014). Text Book of Pulmonary Rehabilitation. (5th edition) Mumbai: Vora medical publications.

- Marutha, R. A & Ann. M. (1997). Nursing Theory Utilization and Application. (1st edition) St. Louis: Mosby.
- Melanie, Mc. Everin, (1998). Pre Operative Nursing Care. Philadelphi: WB Saunders Company.
- Park, K (2015). Parks Textbook of Preventive and Social Medicine. (24th edition). Jabulpur: Bamarsidas Bhanot Publishers.
- Phipps, et. Al. (2012). Medical Surgical Nursing. (7th edition). New Delhi: BI publications.
- Polet, D.F., & Hungler, B.P (2011). Nursing Research: Principles and Methods. (11th edition). Philadelphia: Lippincott.
- Smeltzer, . S. C., & Bare, B.G. (2015). Brunner and Suddarth's Text Book of Medical Surgical Nursing. (13th edition). Philadelphia: Lippincott Publishers.
- Sridhar, R., (2012). Principles of Theatre Techniques. (3rd edition). Delhi: AITBS publications.

Journals

- Ajayi, O.O., & Pandolfino, R .O. (2014). Abdominal Surgeries. African Journals of Nursing and Medical Science. 17(4), 25-36.
- Aparajitha. D. (2015). Assessment of malnutrition among Post operative patients. Health action. 35(4), 77.
- Barnes, W.H.& Browne, G.B. (2015). The effects of post operative Analgesia on Post operative pain and Complication. Nursing Clinical Of North America. 34(4), 433.
- Devdatta Suhas Neogi & Vijayakumar, (2014). Interventional pain management. The Canadian Journal of Nursing. 33(15), 45-65.
- Green, D. et. al. (2012). Prevention of fatal Post operative Pain. British Journal of Nursing. 94(11), 34-38.
- Hollins, Z, & in, Q. (2013). Early Post operative Complication in Abdominal Surgeries. African Jouranal of Medical Sciences. 74(1), 45-56.
- Imai, et. al. (2013). Appendicitis Surgical Management in Japan. Journal of Surgery. 31(6), 110-117.

- Jayashri, G. (2016). A study to evaluate the effectiveness of structured teaching programme on selected Post operative patients. Nightingale Nursing Times. 48(7), 98-102.
- Key, S.M. (2015). The Role of Pre operative Spirometry education. Medical Surgical Journal. 35(4), (94-107.
- Kolewaski, C.D. et. al. (2015). Quality of life and exercise rehabilitation in post operative period of major surgical patients. Journal of Physical Therapy. 9(3), 3-21.
- Manmeet. M. (2014). Effect of health education on knowledge attitude and practice about Surgery. Nightingale Nursing Times. 26 (3), 128-136.
- Mohan, R. (2016). A Comparative study on prevalence of post operative complications in women. Indian journal of community medicine. 27 (2), 56-61.
- Padilla. J. (2015). Physical functioning I n patients with Deep Vein Thrombosis Journal for health. 21(10). 1-6.
- Ridley. J. K. (2014). Exercise during Post operative hospitalization. British Journal of Nursing. 19(3). 34-36.
- Salwan. A. (2016). Effect of exercise on functional independence after abdominal surgery in the elderly Indian of Physiotherapy and Occupational Therapy. 3(4). 45-48.
- Sasikala (2015). Post operative assessment. Nightingale Nursing Times. 2(11). 48
- Ruth. J. E. (2015). A practical guide for post operative patients. 16-45.

Online Abstract

- American Physical Therapy Association section on clinical Electrophysiology and wound management. "Curriculum content guidelines for Electrophysiologic evalutation". American Physical Therapy Association.
- http://www.aptaseewm.org/documents/guideliens/ENMG.

- Dunning. J. (2016). Per operative care-education and outcomes. Retrieved from NCBI website.
- Cooner. (2015). Pulmonary function therapies. www.medline.com.
- Girido, (2016). Importance of compression stocking. www.bmm.com.
- Surgae. N.F. (2014). Post operative Nursing care. www.pubmed.com

UNPUBLISHED THESIS

- Gunadevi. P. (2014). A study to evaluate the effectiveness of Pre operative teaching on Post operative exercises. Unpublished Master's Thesis, Manipal University, Karnataka.
- Rajalakshmi. B. (2012). A study to assess the effectiveness of pre operative teaching on post operative exercise. Unpublished Master's Thesis. Dr.M.G.R. Medical University. Chennai

APPENDIX-I

TEXCITY COLLEGE OF NURSING

Podanur Main Road, Coimbatore - 641 023.
Phone : 0422 - 2410854, 2410443 E-mail : texcitycollege@yahoo.co.in.
Approved by the Government of Tamilnadu Vide G.O. MS. No. 226/22-09-2006 & INC
INC Code - B.Sc. (N) 2903067, M.Sc. (N) 2904079
Affiliated to TN Dr. MGR Medical University

Ref :

Date .....22.12.2016.....

PERMISSION LETTER FOR CONDUCTING THE STUDY

The Manager,
Sai Hospital,
Thambaram,
Chennai.

SUB: Requisition letter for conducting the research study, permission – reg.

Respected Manager,

I, M.Selvam M.Sc (N) II year in Texcity College of Nursing. Our institution's affiliated by Tamilnadu DR.MGR. Medical University, Chennai. As a part of my curriculum requirement of M.Sc (N) programme I have to conduct a research study on, **"Effectiveness of pre-operative teaching on post-operative exercise to prevent complications among patients undergoing abdominal surgeries in selected hospitals at Chennai."**

So, I kindly request you to grant me permission for conducting the study in your esteemed institution. I assure you that I will abide the rules of the hospital and information collected from the study participants will not be disclosed.

Thanking you

Coimbatore

22.12.2016

Yours faithfully,

M. Selvam.

Forwarded.

PRINCIPAL
TEXCITY COLLEGE OF NURSING
Podanur Main Road, Podanur,
Coimbatore - 641 023

APPENDIX-II

TEXCITY COLLEGE OF NURSING

Podanur Main Road, Coimbatore - 641 023.
Phone : 0422 - 2410854, 2410443 E-mail : texcitycollege@yahoo.co.in.
Approved by the Government of Tamilnadu Vide G.O. MS. No. 226/22-09-2006 & INC
INC Code - B.Sc. (N) 2903067, M.Sc. (N) 2904079
Affiliated to TN Dr. MGR Medical University

Ref :

Date .....

LETTER REQUESTING EXPERT OPINION TO ESTABLISH CONTENT VALIDITY

Coimbatore.

(Through- Principal Texcity College of Nursing)

Respected Manager,

SUB: Nursing Education – M.Sc. (N) II year- Content Validity Req – reg.

I wish to state that I am M.Sc. (N) II year student of Texcity College of Nursing has to carry out a research project. This is to be submitted to the TN DR. MGR Medical University, Chennai in partial fulfilment for the requirement for the award of Master of Science in Nursing.

The topic of research project is:

"Effectiveness of pre-operative teaching on post-operative exercise to prevent complications among patients undergoing abdominal surgeries at Chennai."

I have enclosed,

1. Statement of the problem, objectives and hypothesis
2. Demographic data
3. Research tool
4. Teaching module

I request you to go through the items and give your valuable suggestions, modifications. additions and deletions, if any, in the remark column.

Thanking you

Place: Coimbatore

yours faithfully,

Date:

Mr. M.selvam

APPENDIX-III

LIST OF EXPERTS

1. **Dr. Prem kumar.P, MBBS** (Intensivist)
   Sai Hospital,
   Chennai.

2. **Mrs. Littreshia Balin.J M.Sc (N)**
   Medical surgical department,
   Texcity, College of Nursing,
   Coimbatore.

3. **Mrs. Kiruthikadevi S.P, M.Sc (N)**
   Medical surgical department,
   Texcity. College of Nursing,
   Coimbatore.

4. **Mrs.Sathiya Priya, M.Sc (N)**
   Medical surgical department,
   AAB College of Nursing,
   Thiruvannamalai..

5. **Mr.Praveen Msc(N),**
   Medical surgical department,
   Varanam College of Nursing,
   Rajamundry.

6. **Dr.Vijayaragavan,M.B.B.S** (Intensivist)
   Sai Hospital,
   Chennai.

APPENDIX-IV

LETTER SEEKING CONSENT OF SUBJECTS FOR PARTICIPANTS IN THE STUDY

Respected sir / madam,

Good morning. I am M.Selvam. I am doing M.Sc., nursing programme in Texcity College of Nursing at Coimbatore. I am doing a research regarding the effectiveness of pre-operative teaching on post-operative exercise to prevent complications among patients undergoing abdominal surgeries. I kindly request your co-operation. I assure that this technique will not produce any harm.

I, Mr. / Mrs. ……. myself has come to know about through. effectiveness of pre-operative teaching on post-operative exercise to prevent complications among patients undergoing abdominal surgeries.I explained clearly about the effects of this therapy. Hereby I consent to undergo this therapy.

Place:

Date: signature:

APPENDIX-V

CERTIFICATE FOR ENGLISH EDITING
TO WHOMSOEVER IT MAY CONCERN

This is to certify that the tool developed by **Mr. M.Selvam**, M.Sc nursing II year Texcity College of Nursing for dissertation **"**effectiveness of pre-operative teaching on post-operative exercise to prevent complications among patients undergoing abdominal surgeries.**"** is edited for English language appropriateness by **Mrs. Muthumalini Alice M.A (Eng) Bed.**

Signature

APPENDIX-VI

SECTION-1

Demographic Variables

Sample No.

1. **Age in Years**
   a. 21-30 year ☐
   b. 31-40 year ☐
   c. 41-50 year ☐
   d. Above 60 year ☐

2. **Sex**
   a. Male ☐
   b. Female ☐

3. **Education**
   a. Primary ☐
   b. Secondary ☐
   c. Higher Secondary ☐
   d. Graduate ☐
   e. Post graduate ☐

4. **Occupation**
   a. Student ☐
   b. Unemployed ☐
   c. Self employed ☐

d. Labour

e. Office Worker

5. Family income per month

a. Rs. 2001-5000 ☐

b. Rs. 5001-10,000 ☐

c. Rs. > -10,000 ☐

6. Personal habits

a. Smoking ☐

b. Tobacco and betel chewing ☐

c. Consumption of alcohol ☐

d. Nil ☐

7. Weight of patient

a. 35-45 kg ☐

b. 46-55 kg ☐

c. 56-70 kg ☐

d. Above 70 kg ☐

8. Height of patient

a. 145-150 cm ☐

b. 151-155 cm ☐

c. 156-160 cm ☐

d. Above 160 cm ☐

9. Duration of hospitalization

a. 7 days ☐

b. Above 7 days ☐

10. Family type ☐

a. Nuclear

b. Joint

SECTION –II

PART-A

Observation Checklist for Respiratory Assessment

S. No.	Observation	Characteristics	Description	Pretest	Post test				
				D1	D2	D3	D4	D5	D6
1	Skin and nails	Cyanosis	Present						
			Absent						
		Clubbing of fingers and toes	Present						
			Absent						
2	Nose	Air patency	Present						
			Absent						
		Pink mucosa	Present						
			Absent						
		Edema	Present						
			Absent						
		Exudate	Present						
			Absent						
		Polyps	Present						
			Absent						
		Deviation in nasal septum	Present						
			Absent						

		Symmetrical	Present		
			Absent		

3.	Oral mucosa	Pink mucosa	Present		
			Absent		
		Ulceration	Present		
			Absent		
		Exudate	Present		
			Absent		
		Moisture	Present		
			Absent		
		Masses	Present		
			Absent		
4.	Tonsils	Symmetrical	Present		
			Absent		
		Inflammation	Present		
			Absent		
5.	Pharynx	Moisture	Present		
			Absent		
		Exudates	Present		
			Absent		
		Ulceration	Present		
			Absent		
		Swelling	Present		

			Absent		
		Postnasal drip	Present		
			Absent		
6.	Neck	Symmetrical	Present		
			Absent		
		Tracheal deviation	Present		
			Absent		
		Palpable cervical nodes	Present		
			Absent		
7.	Chest	Symmetrical	Present		
			Absent		
		Equal chest movement	Present		
			Absent		
		Transverse diameter twice anteroposterior diameter	Present		
			Absent		
		Chest retraction	Present		
			Absent		
		Symmetrical thoracic excursion	Present		
			Absent		
		Abnormal tactile fremitus	Present		
			Absent		

		Percussion dullness	Present		
			Absent		
		Labored respiration	Present		
			Absent		
		Normal respiration	Present		
			Absent		
		Normal respiratory rate, rhythm and effort	Present		
			Absent		
		Vesicular breath sound	Present		
			Absent		

SECTION-II

PART-B

Observation Checklist for Assessment of Respiratory Complications

S.NO	Characteristics	Description	Post test			
			D1	D2	D3	D4
1	Fever	Present				
		Absent				
2	Decreased breath Sounds	Present				
		Absent				
3	Decreased Oxygen Saturation	Present				
		Absent				
4	Pursed lip breathing	Present				
		Absent				
5	Tripod position	Present				
		Absent				
6	Tachypnea	Present				
		Absent				
7	Pleural friction rub	Present				
		Absent				
8	Altered chest movement	Present				

		Absent				
9	Accessory muscle use	Present				
		Absent				
10	Abdominal paradox	Present				
		Absent				
11	Copious sputum production	Present				
		Absent				
12	Blood tinged sputum	Present				
		Absent				
13	Cyanosis	Present				
		Absent				
14	Chest pain	Present				
		Absent				
15	Consolidation in chest-ray	Present				
		Absent				
16	Weight loss	Present				
		Absent				

SECDTION – III

Observation Checklist for Assessment of Deep Vein Thrombosis

S.No	Characteristics	Description	Post test									
			D1		D2		D3		D4		D5	
			R	L	R	L	R	L	R	L	R	L
1.	Swelling over legs	Present										
		Absent										
2.	Redness over legs	Present										
		Absent										
3.	Tingling or numbness of the foot	Present										
		Absent										
4.	Local warmth over legs	Present										
		Absent										
5.	Human s sign	Present										
		Absent										
6.	Capillary refill in fraction of second	Present										
		Absent										
7.	Tenderness over leg muscles	Present										
		Absent										
8.	Cramping pain in	Present										

	legs	Absent										

SECTION – III

Modified Wound Assessment Parameter Scoring Tool

1. **Depth**
    a. Wound closed and well approximated
    b. Partial thickness
    c. Full thickness
    d. Not visible
    e. Bone involvement
2. **Edges**
    a. Wound closed and well approximated
    b. District border, attached to wound base
    c. Defined, not attached to wound base
    d. Rolled under thickened
    e. Thickened and indurated, red, edematous
3. **Undermining**
    a. None
    b. Less than 2cm
    c. Greater than 2cm but less than 4cm
    d. Greater than 4cm
    e. Involves adjacent structures or organs
4. **Necrotic tissue**
    a. None
    b. White gray loosely adherent
    c. Yellow, loosely adherent slough or fibrous tissue
    d. Loosely adherent brown or black devitalized tissue
    e. Adherent black eschar
5. **Exudate amount**
    a. None

b. Scanty
c. Mild
d. Small
e. Moderate
f. Large

6. Odour

a. None
b. Mild
c. Offensive
d. Foul
e. Extreme

7. Treatment zone skin colour

a. Normal for skin colour
b. Red
c. Pallor or gray
d. Ecchymotic
e. Cyanotic

8. Treatment zone in duration

a. None
b. Minimal demonstrated, easy to blanch
c. Mild demonstrated, spongy tissue
d. Moderate demonstrated, firm and warm
e. Severe demonstrated, hard red and hot

9. Necrotic tissue amount

a. None
b. Up to 25%
c. 25% - 50%
d. 50% - 75%
e. 75% - 100%

10. Exudate type

a. None
b. Serous
c. Serosanginous

d. Bloody
e. Purulent

11. Viable tissue type

a. Wound closed
b. Bright red and glossy
c. Pink and moist
d. Pale and dusky
e. None

12. Viable tissue amount

a. 100%
b. 75%
c. 50%
d. 25%
e. None

13. Status

a. Closed
b. Significant improvement
c. Slight improvement
d. No Change
e. Deteriorated

SECTION – II

PART –A

Observation Checklist for Respiratory Assessment

Scoring Key

S.No		Answer	Score
1.	1.1	Absent	1
	1.2	Absent	1
2.	2.1	Present	1
	2.2	Present	1
	2.3	Absent	1
	2.4	Absent	1
	2.5	Absent	1
	2.6	Absent	1
	2.7	Present	1
3.	3.1	Present	1
	3.2	Absent	1
	3.3	Absent	1
	3.4	Present	1
	3.5	Absent	1

4.	4.1	Present	1
	4.2	Absent	1
5.	5.1	Present	1
	5.2	Absent	1
	5.3	Absent	1
	5.4	Absent	1
	5.5	Absent	1
6.	6.1	Present	1
	6.2	Absent	1
	6.3	Absent	1
7.	7.1	Present	1
	7.2	Present	1
	7.3	Present	1
	7.4	Absent	1
	7.5	Present	1
	7.6	Absent	1
	7.7	Absent	1
	7.8	Absent	1
	7.9	Absent	1
	7.10	Present	1

SECTION –II

PART –B

Observation Checklist for Assessment of Respiratory Complications Scoring Key

S. No	Answer	Score
1.	Absent	0
2.	Absent	0
3.	Absent	0
4.	Absent	0
5.	Absent	0
6.	Absent	0
7.	Absent	0
8.	Absent	0
9.	Absent	0
10.	Absent	0
11.	Absent	0
12.	Absent	0
13.	Absent	0
14.	Absent	0
15.	Absent	0
16.	Absent	0

SECTION –III

Observation Checklist for Assessment of Deep Vein Thrombosis Scoring Key

S. No	Answers	Score
1.	Absent	0
2.	Absent	0
3.	Absent	0
4.	Absent	0
5.	Absent	0
6.	Absent	0
7.	Absent	0
8.	Absent	0

HEALTH EDUCATION

ON

POST OPERATIVE EXERCISES AFTER ABDOMINAL SURGERIES

Topic	: Post Operative Exercises
Group	: Pre Operative Patients
Place	: Surgical Ward
Method of teaching	: Lecture cum Demonstration
Teaching Aids	: Pamphlets, CD

Overall Objective

At the end of the teaching the patients gain knowledge regarding post operative exercises, develop a positive attitude and skills in performing the post operative exercises individually and actively in day to day life.

Behavioural Objective

After the teaching programme post operative patients are able to

- Describe post operative period
- List down the complications of post operative period
- Explain post operative exercise
- Enlist the purpose of post operative exercise
- Demonstrate the post operative exercises
- List out the advantages of post operative exercises

Specific Objective	Content	Teachers Objective
Introduce the topic Describe the post operative Period List down the complications of post	**Introduction** Diseases can be either medical intervention of surgical interventions. Surgical procedure can disrupts the patients, personal, professional, economic life and physical body. For a patient after abdominal surgeries have many respiratory, cardiovascular and other complications. Most of it can be prevented by performing postoperative exercises. **Post Operative Period** Post operative period is the period after the surgery is completed. In this nursing care continues to be a critical element in returning the client to an optimal level of functioning **Post Operative Complications** Post operative complications are conditions that occur in clients who had	

operative period	undergone any kind of surgeries that are risk inherent in surgical procedures. Some of the complications are as follows: ➢ Shock ➢ Haemorrhage ➢ Deep Vein Thrombosis ➢ Pulmonary complications • Atelectasis • Aspiration • Pneumonia • Pulmonary embolism ➢ Urinary retention ➢ Intestinal obstruction ➢ Wound infection ➢ Wound dehiscence and evisceration	

Demonstrate the post operative exercises	Psychological disturbances **Post Operative Exercises** Post operative excises are the exercises that has to be performed after the surgery for early recovery, prevention of complications and returning the client to the optimum level of functioning. **PURPOSES** ➢ To maintain blood circulation ➢ To stimulate respiratory function ➢ To decrease stasis of gas in the intestine ➢ To improve muscle tone ➢ To encourage deep breathing To relieve pressure areas **Turning Exercise** ➢ Life flat with your back on the right side of the bed ➢ Keep left leg straight and flex right knee up over left leg	

	Grasp left side of bed with right hand, pull towards left and roll on to left side **Duration** Turning and reposition should be done every 1-2 hours during post operative period **Benefits** Turning helps to prevent venous stasis, thrombophelbitis, pressure ulcers and respiratory complications **Respiratory Exercises** **Deep Breathing** ➢ Lie down on bed with your back and body up to hip elevated from the bed approximately inclined at 30 degree angle (semi fowlers position) or if possible to sit at the side of bed ➢ Place palms of hands across along the lower borders of anterior ribcage ➢ Take slow deep breaths inhaling through the nose	

	➢ Keep the muscles of upper chest and shoulders relaxed Hold the breath, for 3-5 seconds and then slowly exhale through the mouth **Duration** Deep breathing should be done 5-10 times every hour during post operative period of immobilization. **Benefits** Deep breathing helps to expand collapsed alveoli in lungs and prevents post operative pneumonia and atelectasis. **Coughing Exercise** • Lie on bed with your back in semi fowlers position or if possible sit at the sides of the bed • Splint incisional areas with your hands or a small pillow • Take two slow deep breath, inhaling through nose and exhaling through mouth	

	• Inhale deeply third time and hold breath to couth of three. Cough fully for two or three consecutive coughs without inhaling between coughs. **Duration** Cough 2-3 times every two hourly while awake in the post operative period. **Benefits** Coughing helps to remove retained chest secretions from bronchi and large airways. **Leg Exercises** ➢ Lie flat on bed with your back ➢ Rotate each ankle in complete circle and draw imaginary circles with big toe. Report for five times • Do alternate dorsi flexion and plantar flexion of the feet. Repeat it for five times	

List down the advantages of post operative exercises	➢ Raise and lower the legs alternatively from the surface of the bed, keeping legs straight. Repeat for five times **Benefits** Leg exercises helps to improve circulation, muscle strength and muscle tone **Early Ambulation** ➢ Place the legs over the edge of the bed ➢ Hold the small folded towel against the incisional site or wound ➢ First move to a sitting position ➢ Dangle the legs to free them ➢ Assume standing position with the feet flat on the floor ➢ Then walk as much as tolerable in the post operative period ➢ Place the legs over the edge of the bed Hold the small folded towel. **ADVANTAGES** ➢ To improve the circulation of fresh air through out the lungs	

	➢ To strengthen the capacity and coordination of the respiratory muscles ➢ To loosen the respiratory secretions for expectoration ➢ To maintain joint mobility ➢ To improve blood circulation ➢ To prevent thrombus formation ➢ To prevent pulmonary complications ➢ To Prevent general muscle weakness **Conclusion** Post operative complications are a risk inherent in surgical procedures. For this the doctors and nurses should ne alert of all the possible complications which arise in post operative patients. Inorder to prevent the occurrence of such complications patients should study the post operative exercises pre operatively, so that the patients can familiarize and practice without any assistance	

Inhale deeply third time and hold breath to couth of three. Cough fully for two or three consecutive coughs without inhaling between coughs.

Duration : Cough 2-3 times every two hourly while awake in the post operative period.

Benefits : Coughing helps to remove retained chest secretions from bronchi and large airways.

Leg Exercises

- Lie flat on bed with your back
- Rotate each ankle in complete circle and draw imaginary circles with big toe. Report for five times
- Do alternate dorsi flexion and plantar flexion of the feet. Repeat it for five times
- Raise and lower the legs alternatively from the surface of the bed, keeping legs straight. Repeat for five times

Benefits : Leg exercises helps to improve circulation, muscle strength and muscle tone

Early Ambulation

- Place the legs over the edge of the bed
- Hold the small folded towel against the incision site or wound
- First move to a sitting position
- Dangle the legs to free them
- Assume standing position with the feet flat on the floor
- Then walk as much as tolerable in the post operative period
- Place the legs over the edge of the bed
- Hold the small folded towel.

Advantages

- To improve the circulation of fresh air through out the lungs
- To strengthen the capacity and coordination of the respiratory muscles
- To loosen the respiratory secretions for expectoration
- To maintain joint mobility
- To improve blood circulation
- To prevent thrombus formation
- To prevent pulmonary complications
- To Prevent general muscle weakness

Mr. Selvam
M.Sc Nursing 2nd Year
Mecical Surgical Nursing
Texcity College of Nursing
Coimbatore-23

POST OPERATIVE EXERCISES AFTER ABDOMINAL SURGERIES

TEXCITY COLLEGE OF NURSING
COIMBATORE-23

Introduction

Diseases can be either medical intervention of surgical interventions. Surgical procedure can disrupts the patients, personal, professional, economic life and physical body. For a patient after abdominal surgeries have many respiratory, cardiovascular and other complications. Most of it can be prevented by performing postoperative exercises.

Post Operative Period

Post operative period is the period after the surgery is completed. In this nursing care continues to be a critical element in returning the client to an optimal level of functioning.

Post Operative Complications

- Haemorrhage
- Deep Vein Thrombosis
- Pulmonary complications
- Atelectasis
- Aspiration
- Pneumonia
- Pulmonary embolism
- Urinary retention
- Intestinal obstruction
- Wound infection
- Wound dehiscence and evisceration
- Psychological disturbances

Post Operative Exercises

Post operative excises are the exercises that has to be performed after the surgery for early recovery, prevention of complications and returning the client to the optimum level of functioning.

PURPOSES

- To maintain blood circulation
- To stimulate respiratory function
- To decrease stasis of gas in the intestine
- To improve muscle tone
- To encourage deep breathing
- To relieve pressure areas

Turning Exercise

- Life flat with your back on the right side of the bed
- Keep left leg straight and flex right knee up over left leg
- Grasp left side of bed with right hand, pull towards left and roll on to left side

Duration : Turning and reposition should be done every 1-2 hours during post operative period.

Benefits : Turning helps to prevent venous stasis, thrombophelbitis, pressure ulcers and respiratory complications

Respiratory Exercises

Deep Breathing

- Lie down on bed with your back and body up to hip elevated from the bed approximately inclined at 30 degree angle (semi fowlers position) or if possible to sit at the side of bed
- Place palms of hands across along the lower borders of anterior ribcage
- Take slow deep breaths inhaling through the nose
- Keep the muscles of upper chest and shoulders relaxed
- Hold the breath, for 3-5 seconds and then slowly exhale through the mouth

Duration : Deep breathing should be done 5-10 times every hour during post operative period of immobilization.

Benefits : Deep breathing helps to expand collapsed alveoli in lungs and prevents post operative pneumonia and atelectasis.

Coughing Exercise

Lie on bed with your back in semi fowlers position or if possible sit at the sides of the bed

Splint incisional areas with your hands or a small pillow

Take two slow deep breath, inhaling through nose and exhaling through mouth